

## 10 Operating Instructions and Installation

### 10-1 Front



#### 1. Menu button

Opens the OSD menu. Also use to exit the OSD menu or return to the previous menu.

#### 2. MagicBright button

MagicBright is a new feature providing optimum viewing environment depending on the contents of the image you are watching. Currently six different modes are available: Custom, Text, Internet, Game, Sport and Movie. Each mode has its own pre-configured brightness value. You can easily select one of six settings by simply pressing MagicBright control buttons.

##### 1) Custom

Although the values are carefully chosen by our engineers, the pre-configured values may not be comfortable to your eyes depending on your taste. If this is the case, adjust the brightness and contrast by using the OSD menu.

##### 2) Text

For documentations or works involving heavy text.

##### 3) Internet

For working with a mixture of images such as text and graphics.

##### 4) Game

For watching motion pictures such as a game.

##### 5) Sport

For watching motion pictures such as a sport.

##### 6) Movie

For watching motion pictures such as a DVD or Video CD.

##### 7) Dynamic Contrast

Dynamic Contrast is to automatically detect distribution of inputted visual signal and adjust to create optimum contrast.

#### 3. Brightness button

When OSD is not on the screen, push the button to adjust brightness.

#### 2,3. Adjust buttons

Adjust items in the menu.

### 4. Enter button / SOURCE button

Activates a highlighted menu item. /

Push the 'SOURCE', then selects the video signal while the OSD is off. (When the source button is pressed to change the input mode, a message appears in the upper left of the screen displaying the current mode -- analog or digital input signal.)

### 5. AUTO button

Use this button for auto adjustment.

### 6. Power button

Use this button for turn the monitor on and off.

### Power indicator

This light glows green during normal operation, and blinks green once as the monitor saves your adjustments.

## 10-2 Rear



(The configuration at the back of the monitor may vary from product to product.)

### 1. Power port

Connect the power cord for your monitor to the power port on the back of the monitor.

### 2. DVI IN port

Connect the DVI cable to the DVI port on the back of your monitor.

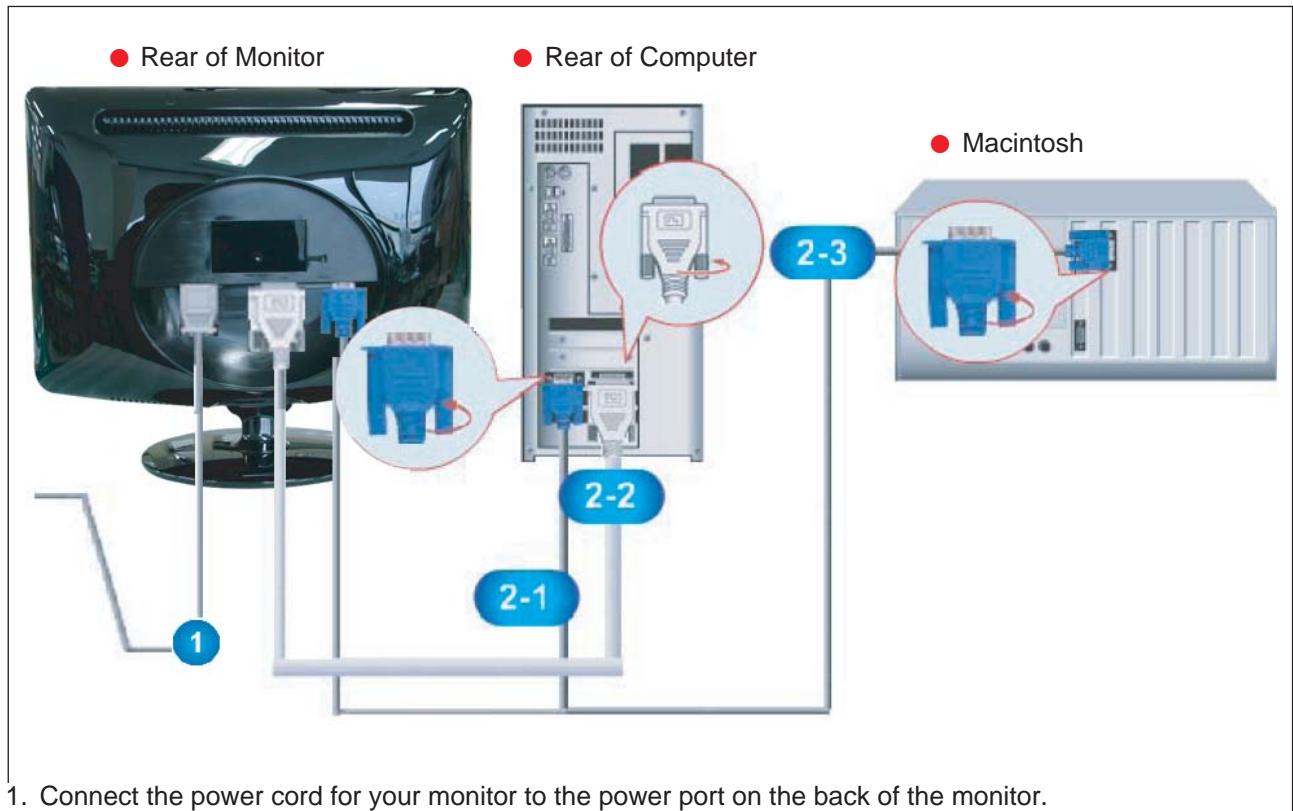
### 3. RGB IN port

Connect the signal cable to the 15-pin, D-sub port on the back of your monitor.

### 4. Kensington Lock

The Kensington lock is a device used to physically fix the system when using it in a public place.

## 10-3 Connecting the monitor



1. Connect the power cord for your monitor to the power port on the back of the monitor. Plug the power cord for the monitor into a nearby outlet.

2-1. Using the D-sub (Analog) connector on the video card.  
Connect the signal cable to the 15-pin, D-sub connector on the back of your monitor.



2-2. Connected to a Macintosh.  
Connect the monitor to the Macintosh computer using the D-SUB connection cable.

2-3. In the case of an old model Macintosh, you need to connect the monitor using a special Mac adapter.

3. Turn on your computer and monitor. If your monitor displays an image, installation is complete.

## Memo


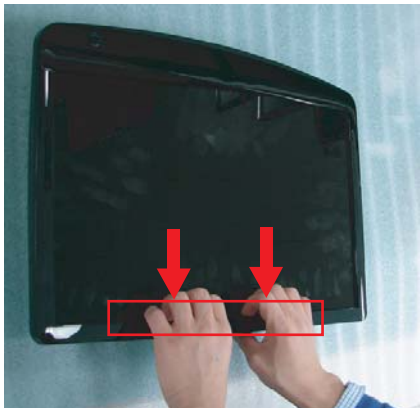

# 11 Disassembly and Reassembly

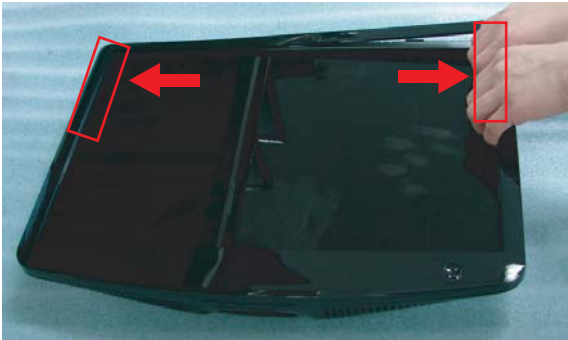
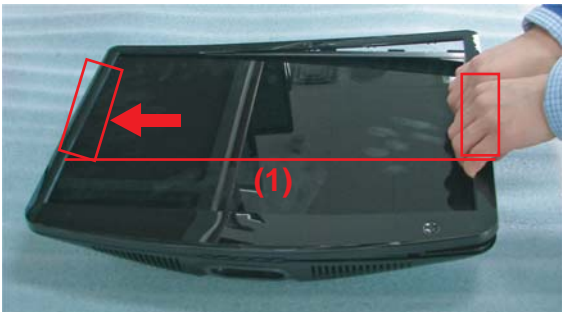


This section of the service manual describes the disassembly and reassembly procedures for the LS17PEA/LS19PEB TFT-LCD monitors.

**⚠ WARNING:** This monitor contains electrostatically sensitive devices. Use caution when handling these components.

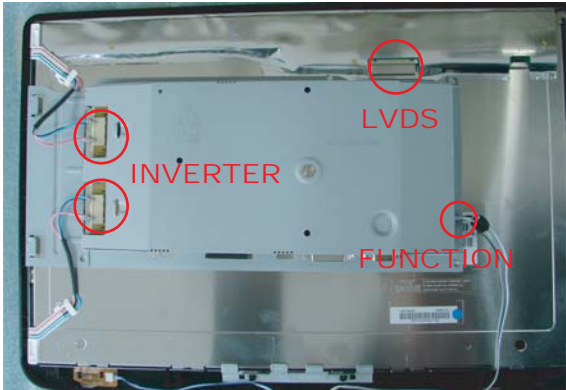
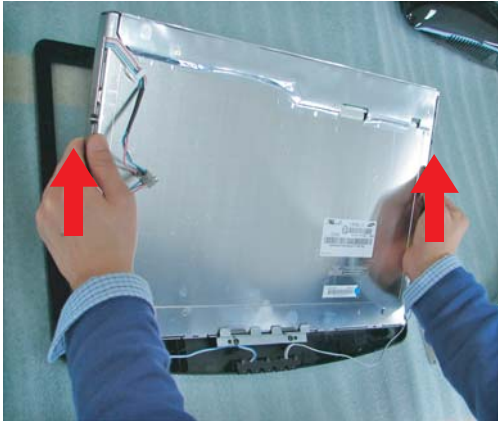
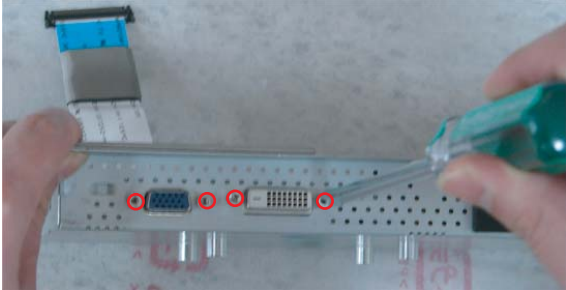
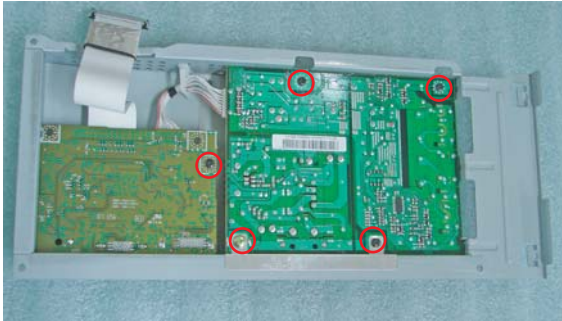
## 11-1 Disassembly


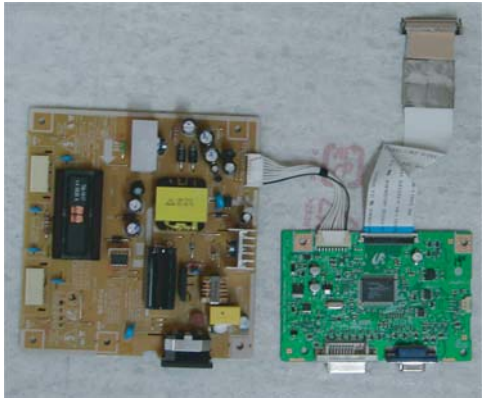
- ⚠ Cautions:**
- 1. Disassemble stand on a flat desk.
  - 2. Disconnect the monitor from the power source before disassembly.

Description	Picture Description
1. Place a soft cloth on the desk and place the monitor on the cloth upside down. Remove the stand in the direction of the arrow.	
2. Turn the monitor so the front section is facing upwards. Remove the marked parts from the front cover, as shown in the figure below.	
3. Remove the marked part from the top edge of the front cover, as shown in the figure below.	

Description	Picture Description
<p>4. Remove the marked parts from both sides of the front cover, as shown in the figure below.</p>	
<p>5. Remove the marked part from the front cover, as shown in the figure below.</p> <p>Caution: Do not lift the front cover over position (1), which may cause damage to it.</p>	
<p>6. Turn the monitor so the back of it is facing upwards. Lift up and remove the back cover.</p>	
<p>7. Use the jig to remove the shield lamp. (Be careful Shield.)</p>	



Description	Picture Description
<p>8. Disconnect cables. (LVDS, INVERTER and FUNCTION cable)</p>	 <p>The image shows the back of the LCD panel with three cables connected. Red circles highlight the connection points, and red text labels identify them: 'LVDS' at the top right, 'INVERTER' in the middle left, and 'FUNCTION' at the bottom right.</p>
<p>9. Lift up the LCD panel.</p>	 <p>The image shows a person's hands lifting the LCD panel from the bottom. Two red arrows point upwards from the bottom corners of the panel, indicating the direction of movement.</p>
<p>10.Remove 4 screws.</p>	 <p>The image shows a close-up of a metal bracket with four screws. A hand is using a green-handled screwdriver to remove one of the screws. Red circles highlight the four screw locations.</p>
<p>11. Remove 5 screws and Lift up the Bracket Support.</p>	 <p>The image shows the bracket support assembly with two green circuit boards. Five screws are highlighted with red circles: two on the left board and three on the right board.</p>

Description	Picture Description
12. Lift up the Main PCB and IB Board.	
13. Main PCB and IB Board	

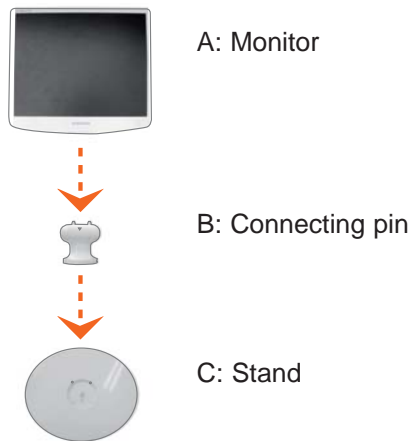
## 11-2 Reassembly

Reassembly procedures are in the reverse order of disassembly procedures.



11-3 Stand

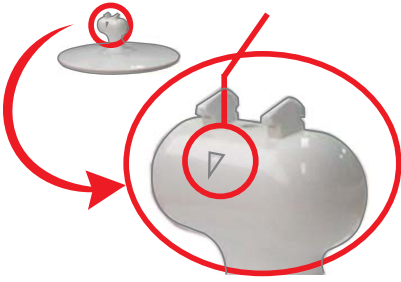

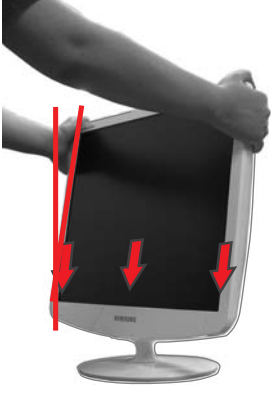
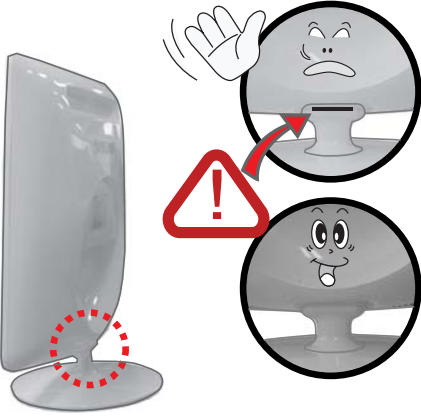
11-3-1 Installing the Stand





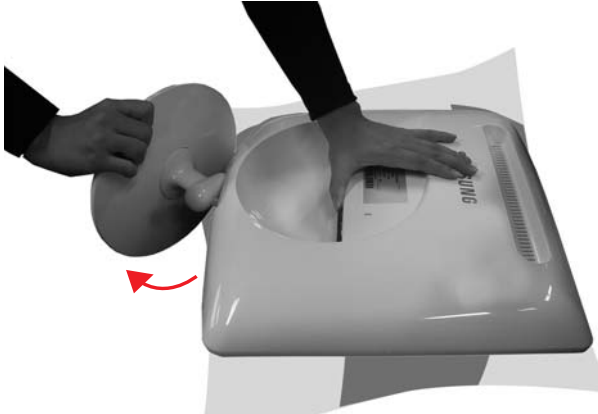

**Caution**


When lifting up or moving the monitor, do not lift the monitor upside down while holding only the stand, as this may cause the monitor to fall, leading to damage or personal injury.

Description	Picture Description
1. Insert the connecting pin into the stand.	
2. Stand the screw handles up and tighten the screws firmly by turning them.	
3. Place the screw handles back down.	

Description	Picture Description
<p>4. Turn the stand so ▽ mark on the connecting pin is facing the front.</p>	
<p>4. Check the connecting part between the monitor and the stand.</p>	
<p>4. Tilt the monitor upwards at an angle of 5 ° to 10 ° so that the base is closer to you than the top. Then hold the monitor on the stand by its top parts and push them downwards.</p> <p>(You can assemble it more easily by pushing it down while wiggling it a little to the left and right.)</p>	
<p>5. When the monitor is assembled correctly, the straight groove line at the back of the connecting pin will not be visible when the monitor is erected at 90 °.</p>	

11-3-2 Removing the Stand

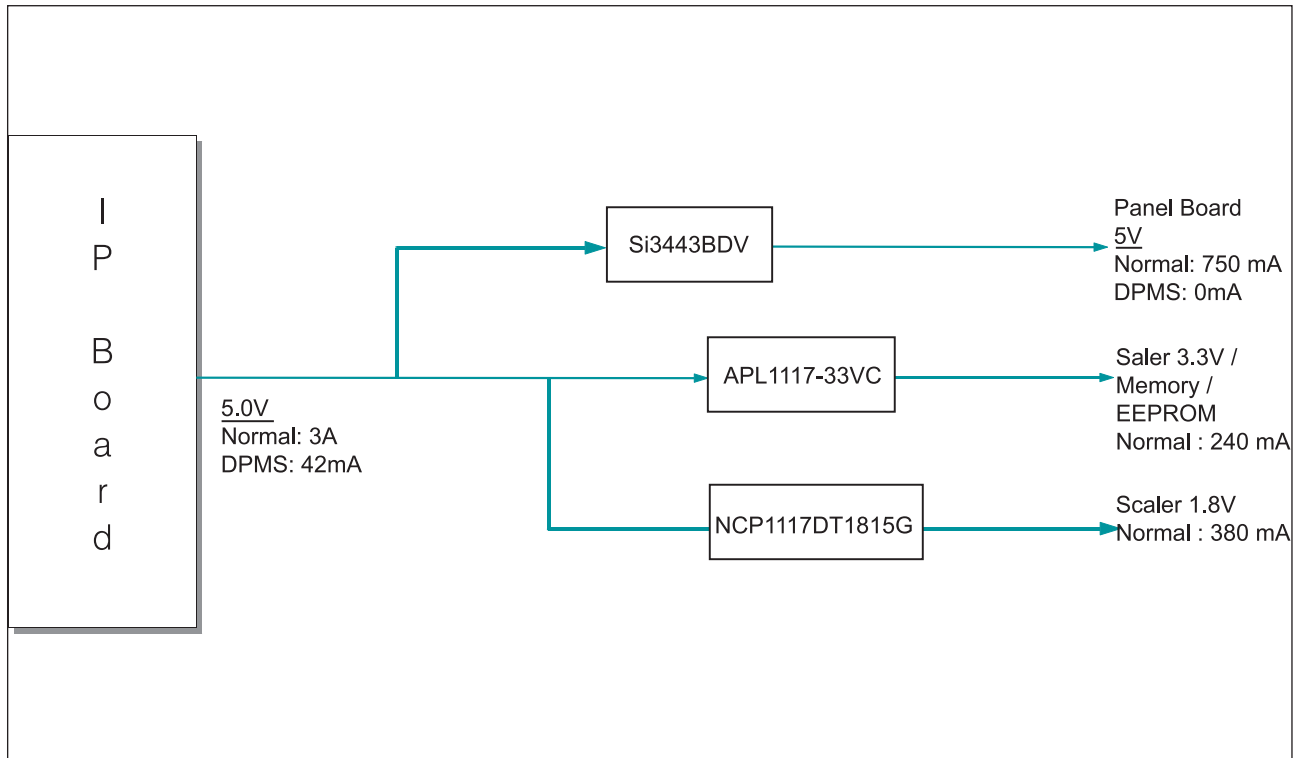
Description	Picture Description
<p>1. Place a soft cloth or cushion on the table and place the monitor with the front facing downwards.</p>	
<p>2. Hold the monitor and lean the stand upwards.</p>	
<p>3. Hold the monitor, and then twist the stand strongly to the left and pull it out.</p>	
<p>4. Stand the screw handles up and unfasten the screws by turning them.</p>	

Description	Picture Description
<p>5. Remove the connecting pin from the stand.</p>	

## 13 Circuit Descriptions

### 13-1 Overall Block Structure

#### 13-1-1 Power Tree



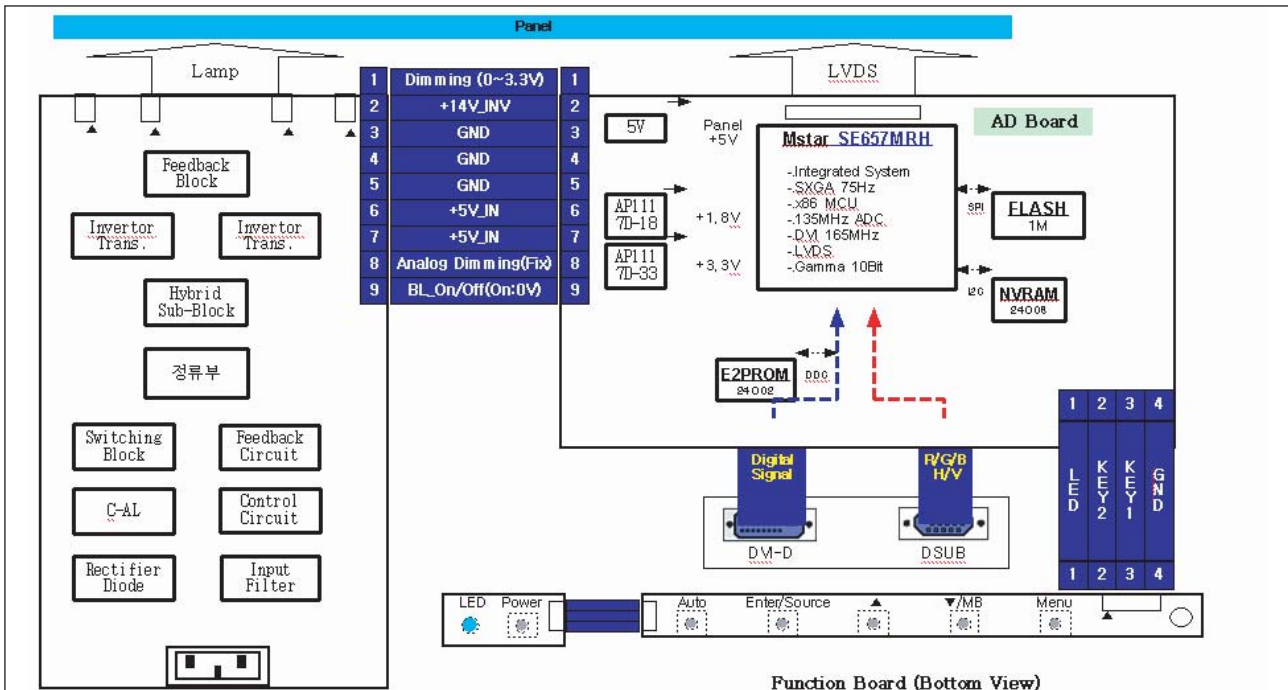
1. When the AD board is in DPMS state:

- 1.1 The IP has been designed so that it operates with a power consumption of less than 0.6W of.
- 1.2 The Scaler consumes power up to 37mA
- 1.3 The power to the panel is switched off

2. When the AD board is operating normally:

- 2.1 The maximum power consumption of the panel lamps is described below (It may vary depending on the panel manufacturer)  
 $4 \times (7.5\text{mA} \times 720\text{mVrms}) = 4 \times 5.4 = 21.6\text{W}$
- 2.2 The power consumption of the Panel Control board is as follows:  $5\text{V} \times 720\text{mA} = 3.6\text{W}$
- 2.3 The power consumption of the Scaler is as follows:  $3.3\text{V} \times 245\text{mA} + 1.8\text{V} \times 300\text{mA} = 1.35\text{W}$

## 13-1-2 Main Board Parts



1. Inverter: A conversion device that converts DC rated voltage/current to high ones necessary for the panel lamp.
2. DC/DC(Regulator): General term for DC to DC converting devices.  
The IP board receives 5V and outputs 1.8 or 3.3V that is supplied to the scaler (GM5726).
3. Power MosFET: The IP board receives 5V and outputs a lower voltage in DPMS mode and supplies the whole 5V for the panel operating board in normal conditions. In that case, the switching of Power MosFET is controlled by Micom.
4. Scaler: Receives the digital TMDS and analog R,G,B signals and convert them to proper resolutions using up- or down- scaling that are transferred to the panel in the LDVS formats.
5. Crystal(Oscillator): Use one 14.318MHz oscillator externally to supply power to both MCU and Scaler at the same time.
6. SCALER & EEPROM: I2C is a two-way serial bus of two lines that supports communications across the integrated circuits as well as between FLASH and EEPROM.  
In particular, FLASH and Scaler (GM5726) use the SDR direct bus for mutual communications, which is an effective, speedy system because it allows 4 additional address/data lines compared to the old serial systems.
7. Function Key: A certain keystroke generates a certain electrical potential, which is transferred into ADC input port of the Scaler and then converted to a digital value by the A/D converter of the chip. The digital value (data) is a clue to which key is entered. In practical, the voltage levels are set as below.

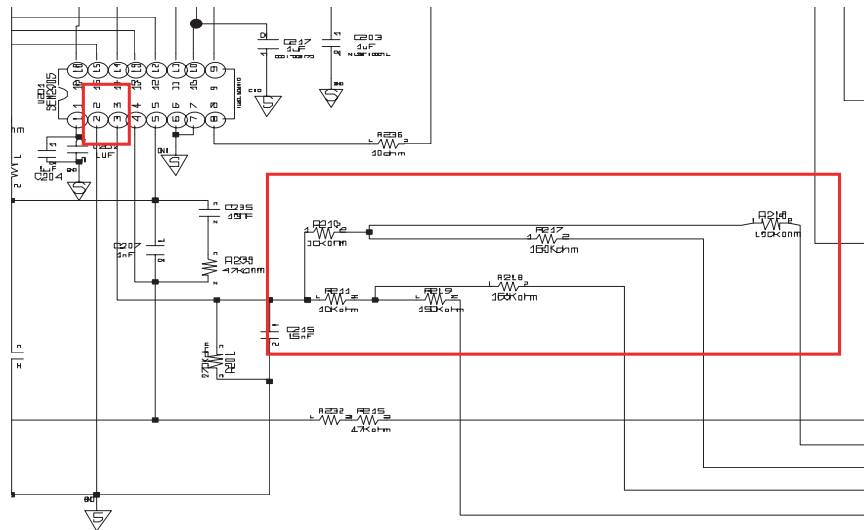
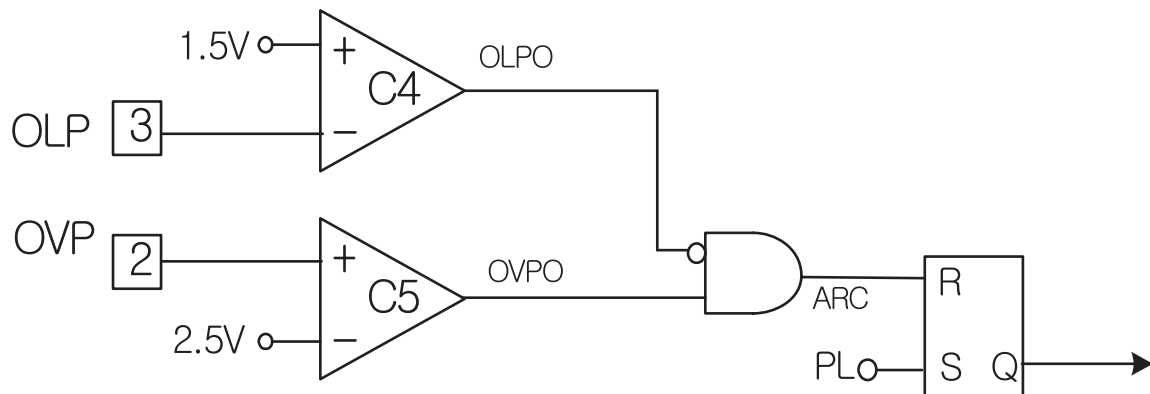




## 13-1-5 IP BOARD(inverter) PROTECTION Parts

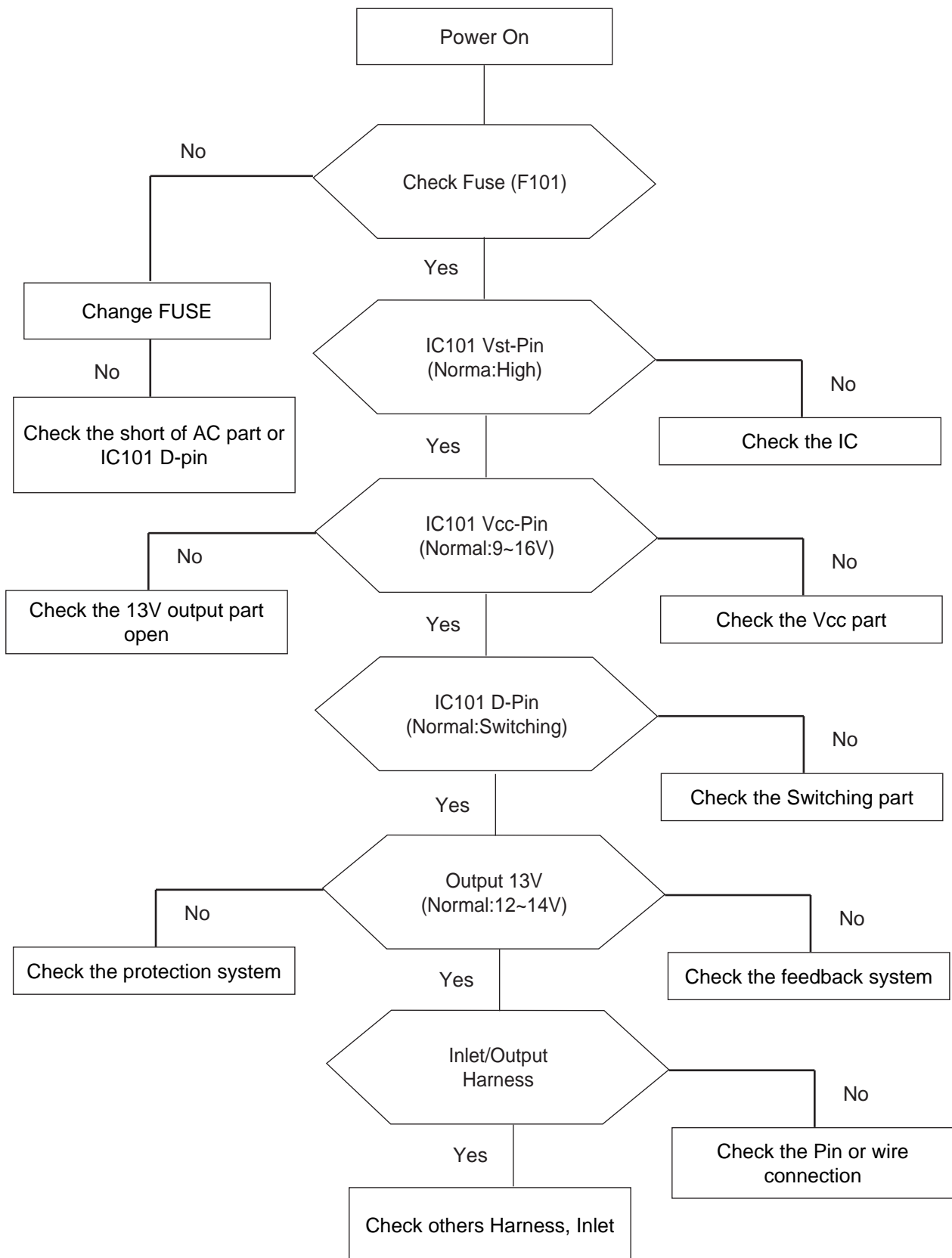
## PROTECTION Parts

- PROTECTION Parts are divided two parts. When lamp voltage rose as absurd and lamp feedback electric current would not be sensed. So all of the two half IP-Board's function that prevent action the enemy more than IP-Board's continous abnormality action.
- When Trans output voltage rose as absurd, become OVP and halts IP-board's function because the divided voltage is inputted by IC(U201) 2 PIN.
- When lamp current is sensed, become OLP and halts IC because the IC(U201) 2 PIN is became under 2.5V

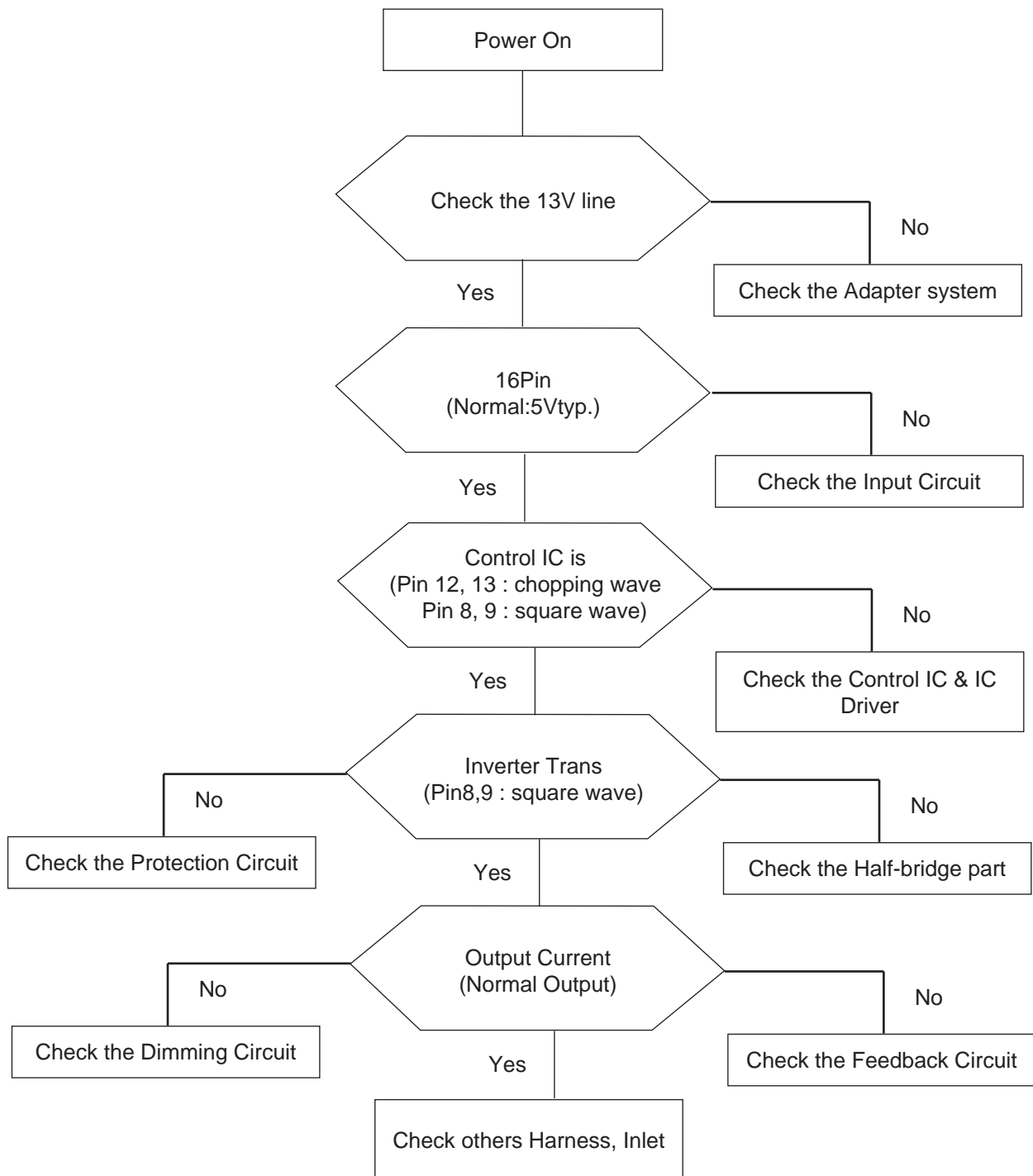


## 13-2 Trouble Shooting

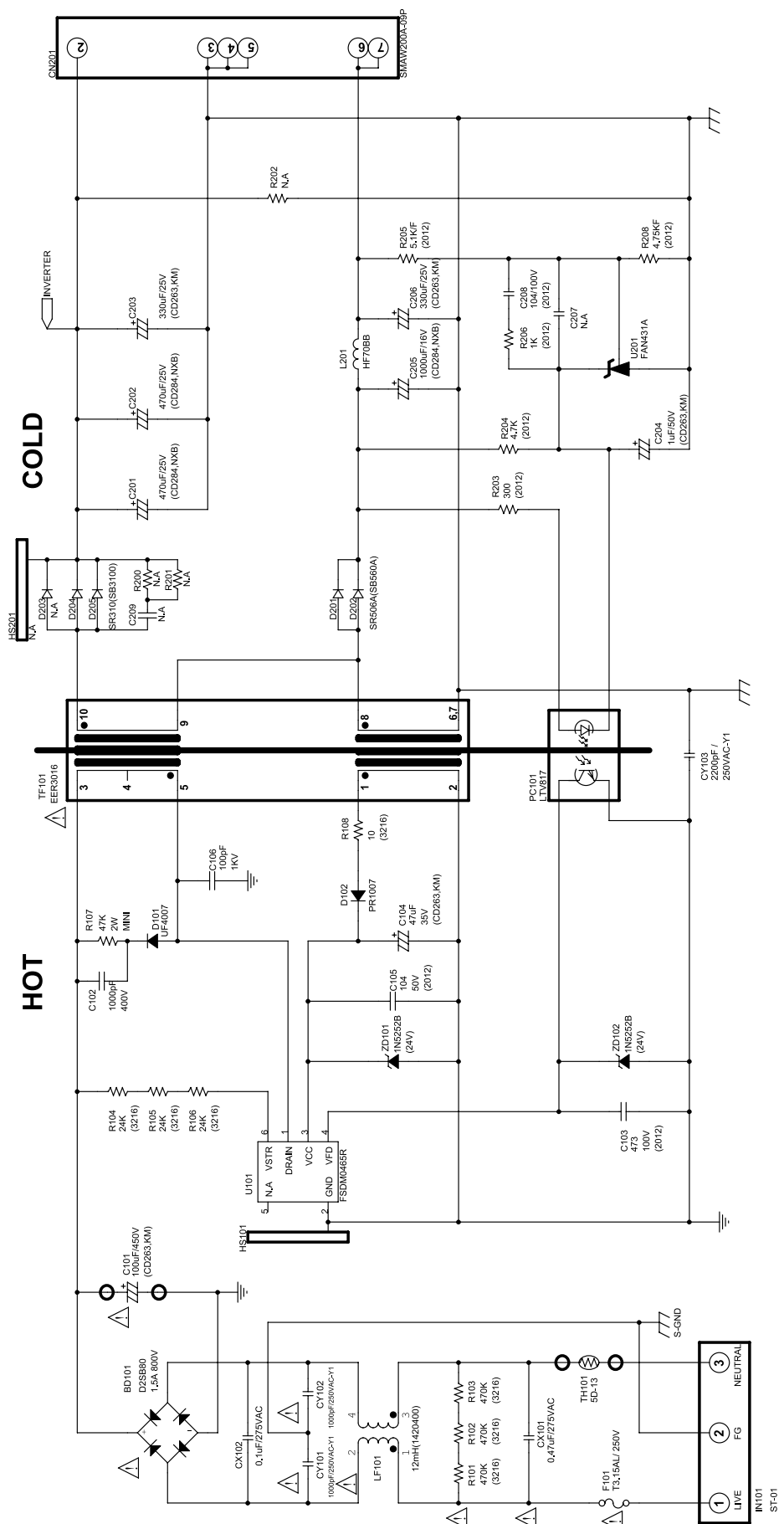
## 13-2-1 IP BOARD(Power)



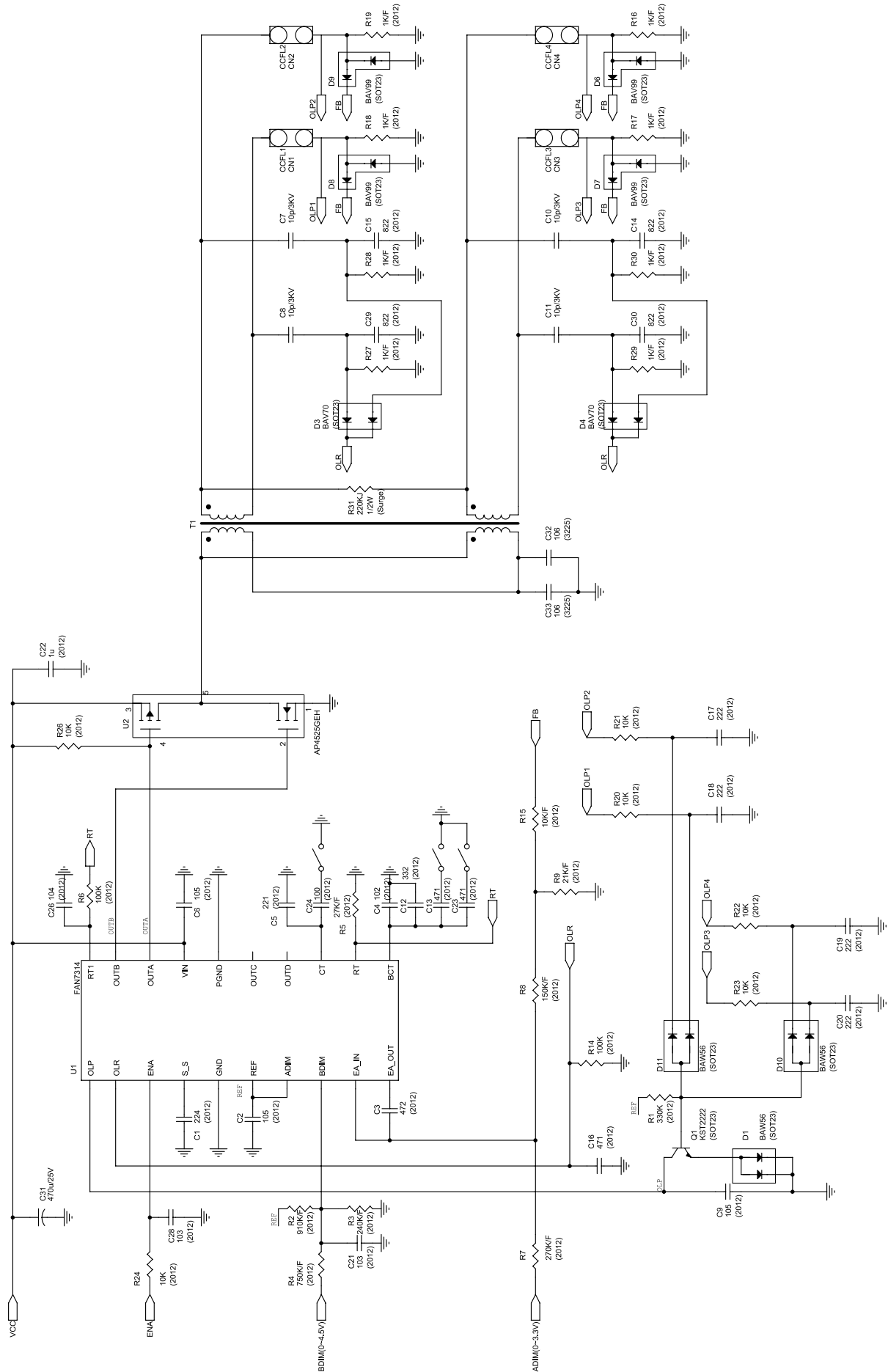
## 13-2-1 IP BOARD(Inverter)



13-3 IP BOARD(Power) Schematic Diagrams



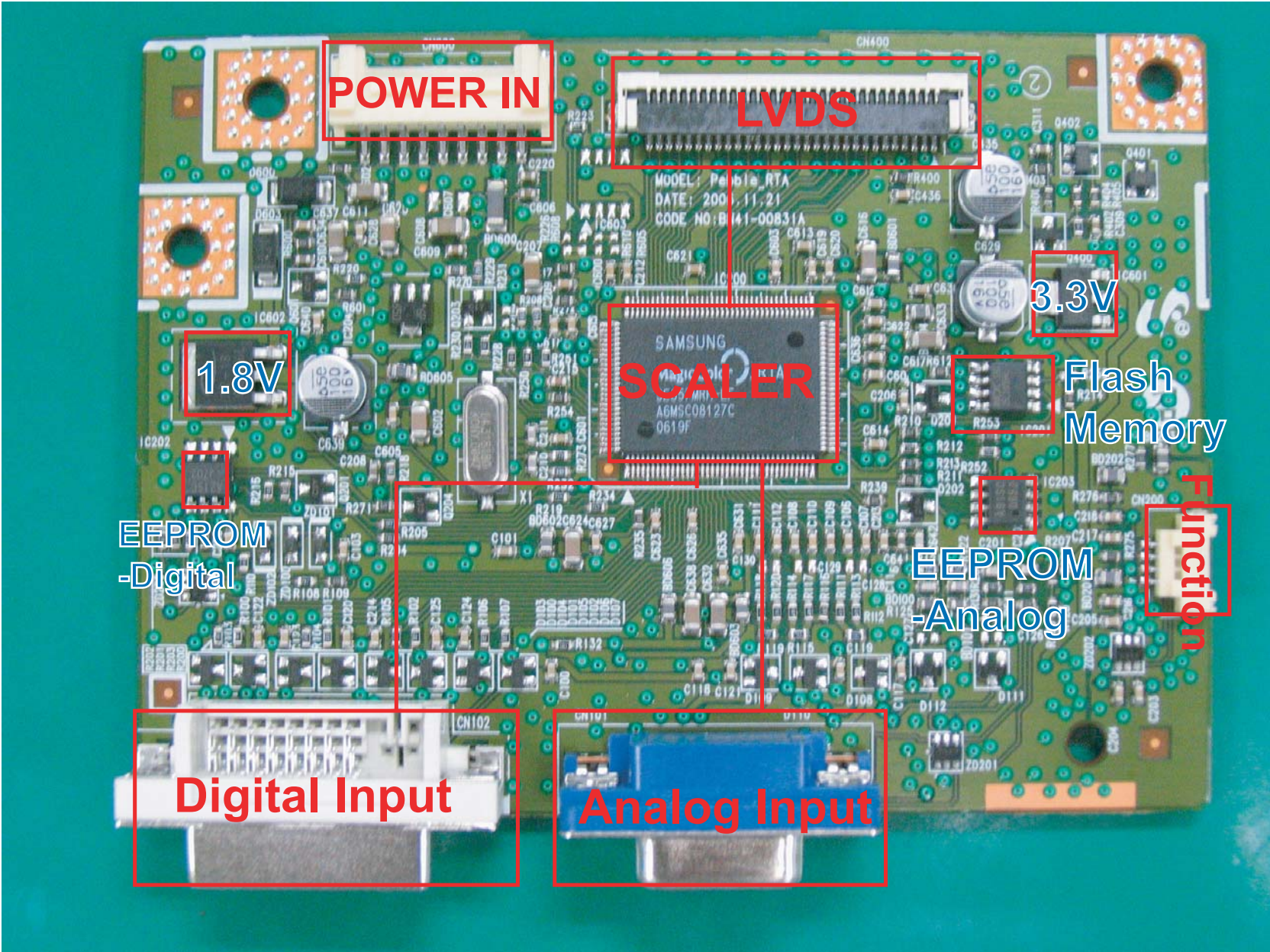
## 13-4 IP BOARD(Inverter) Schematic Diagrams





12 PCB Diagram

12-1 Main PCB



Memo

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## 14 Reference Information

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### 14-1 Technical Terms

#### **-TFT-LCD**

##### **(Thin film Transistor Liquid Crystal Display)**

ADC(Analog to Digital Converter)

This is a circuit that converts from analog signal to digital signals.

#### **-PLL(Phase Locked Loop)**

During progressing ADC, Device makes clock synchronizing HSYNC with Video clock

#### **-Inverter**

Device that supplies Power to LCD panel lamp. This device generates about 1,500~2,000V.

#### **AC Adapter**

Device that converts AC(90V~240V) to DC(+12V or 14V)

#### **SMPS(Switching Mode Power Supply)**

Switching Mode Power supply. This design technology is used to step up/down the input power by switching on/off

#### **-FRC(Frame Rate Controller)**

Technology that changes the number of frames displayed on screen per second.

TFT-LCD panel requires 60 frames per second.

This technology is needed to convert input image to 60 frames per second regardless input frame quantity.

#### **-Image Scaler**

Technology that converts an input resolution to another resolution.(ex. 640\* 480 to 1024\*768)

#### **-Auto Configuration(Auto adjustment)**

This is an algorithm to adjust monitor to optimum condition by pushing one key.

#### **-OSD(On Screen Display)**

Customers can easily control the screen settings using the OSD.

#### **-FINE**

The "Fine" adjustment is used to adjust visibility by controlling phase difference.

#### **-COARSE**

This adjustment adjusts the display by tuning Video clock and PLL clock.

#### **-DVI (Digital Visual Interface)**

This provides a high speed digital connection for visual data types that is display technology independent. This interface is primarily focused at providing a connection between a computer and its display device.

#### **-L.V.D.S.(Low Voltage Differential Signaling)**

A kind of transmission method for Digital.It can be used from Main PBA to Panel.

#### **-T.M.D.S**

##### **(Transition minimized Differential Signaling)**

a kind of transmission method for Digital.

It can be used from Video card to Main PBA.

#### **-DDC(Display data channel)**

It is a communication method between Host Computer and related equipment.

It enables Plug and Play between PC and Monitor.

#### **-EDID**

Extended Display Identification Data PC can recognize monitor information such as Product data, Product name,Display mode,Serial number and Signal source, etc Data is recognised via DDC Line linking PC and Monitor.

#### **-Dot Pitch**

The image on a monitor is composed of red, green and blue dots. The closer the dots, the higher the resolution. The distance between two dots of the same color is called the 'Dot Pitch'. Unit: mm

#### **-Vertical Frequency**

The screen must be redrawn several times per second in order to create and display an image for the

user. The frequency of this repetition per second is called Vertical Frequency or Refresh Rate. Unit: Hz  
Example: If the same light repeats itself 60 times per second, this is regarded as 60 Hz.

### **-Horizontal Frequency**

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle. The inverse number of the Horizontal Cycle is called Horizontal Frequency.  
Unit: kHz

### **-Interlace and Non-Interlace Methods**

Showing the horizontal lines of the screen from the top to the bottom in order is called the Non-Interlace method while showing odd lines and then even lines in turn is called the Interlace method. The Non-Interlace method is used for the majority of monitors to ensure a clear image. The Interlace method is the same as that used in TVs.

### **-Plug & Play**

This is a function that provides the best quality screen for the user by allowing the computer and the monitor to exchange information automatically. This monitor follows the international standard VESA DDC for the Plug & Play function.

### **-Resolution**

The number of horizontal and vertical dots used to compose the screen image is called 'resolution'. This number shows the accuracy of the display. High resolution is good for performing multiple tasks as more image information can be shown on the screen.

**Example:** If the resolution is 1280 x 1024 , this means the screen is composed of 1280 horizontal dots (horizontal resolution) and 1024 vertical lines (vertical resolution).

## 14-2 Pin Assignments

Pin No.	Sync Type	15-Pin D-Sub Signal Cable Connector		
		Separate	Composite	Sync-on-green
1		Red	Red	Red
2		Green	Green	Green + H/V Sync.
3		Blue	Blue	Blue
4		GND	GND	GND
5		DDC Return (GND)	DDC Return (GND)	DDC Return (GND)
6		GND-R	GND-R	GND-R
7		GND-G	GND-G	GND-G
8		GND-B	GND-B	GND-B
9		DDC Power Input (+5V)	DDC Power Input (+5V)	DDC Power Input (+5V)
10		Self Raster	Self Raster	Self Raster
11		GND	GND	GND
12		Bi-Dr Data (SDA)	Bi-Dr Data (SDA)	Bi-Dr Data (SDA)
13		H-Sync.	H/V-Sync.	Not Used
14		V-Sync.	Not Used	Not Used
15		DDC Clock (SCL)	DDC Clock (SCL)	DDC Clock (SCL)

Pin No.	Sync Type	24P DVI-D		
1		Rx2-	13	No Connection
2		Rx2+	14	+5V_M
3		GND	15	Self Raster
4		No Connection	16	+5V_M
5		No Connection	17	Rx0-
6		DDC Clock (SCL)	18	Rx0+
7		DDC Data (SDA)	19	NC
8		NC	20	No Connection
9		Rx1-	21	No Connection
10		Rx1+	22	NC
11		NC	23	RxC+
12		No Connection	24	RxC-

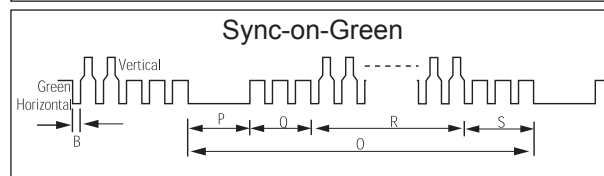
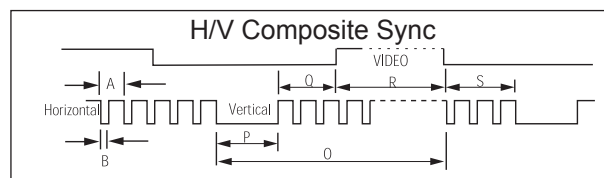
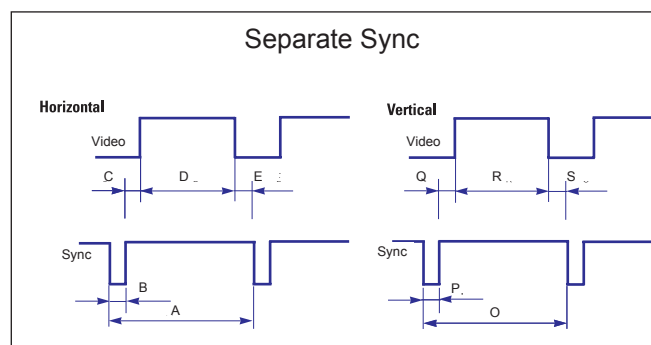


## 14-3 Timing Chart

This section of the service manual describes the timing that the computer industry recognizes as standard for computer-generated video signals.

Table 14-1 Timing Chart

Mode  Timing	IBM		VESA						
	VGA2/ 70 Hz 720 x 400	VGA3/ 60 Hz 640 x 480	640/75 Hz 640x480	800/60 Hz 800x600	800/75 Hz 800x600	1024/60 Hz 1024x768	1024/75 Hz 1024x768	1280/60 Hz 1280x1024	1280/75 Hz 1280x1024
fH (kHz)	31.469	31.469	37.500	37.879	46.875	48.363	60.023	63.981	79.975
A $\mu$ sec	31.777	31.778	26.667	26.400	21.333	20.677	16.660	11.852	12.504
B $\mu$ sec	3.813	3.813	2.032	3.200	1.616	2.092	1.219	1.037	1.067
C $\mu$ sec	1.589	1.589	3.810	2.200	3.232	2.462	2.235	2.296	1.837
D $\mu$ sec	26.058	26.058	20.317	20.000	16.162	15.754	13.003	9.259	9.481
E $\mu$ sec	0.318	0.318	0.508	0.000	0.323	0.369	0.203	0.000	0.119
fV (Hz)	70.087	59.940	75.000	60.317	75.000	60.004	75.029	60.020	75.025
O msec	14.268	16.683	13.333	16.579	13.333	16.666	13.328	16.005	13.329
P msec	0.064	0.064	0.080	0.106	0.064	0.124	0.050	0.047	0.038
Q msec	0.858	0.794	0.427	0.607	0.448	0.600	0.466	0.594	0.475
R msec	13.155	15.761	12.800	15.840	12.800	15.880	12.795	15.630	12.804
S msec	0.191	0.064	0.027	0.0261	0.021	0.062	0.017	0.016	0.013
Clock Freq. (MHz)	28.322	26.175	31.500	40.000	49.500	75.000	78.750	108.000	135.000
Polarity H.Sync	Negative	Negative	Negative	Positive	Positive	Negative	Positive	Positive	Positive
V.Sync	Positive	Negative	Negative	Positive	Positive	Negative	Positive	Positive	Positive
Remark	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate	Separate



A : Line time total      B : Horizontal sync width  
 C : Back porch      D : Active time      Q : Back porch  
 E : Front porch      S : Front porch

O : Frame time total      P : Vertical sync width  
 R : Active time



## 14-4 Preset Timing Modes

-If the signal transferred from the computer is the same as the following Preset Timing Modes, the screen will be adjusted automatically. However, if the signal differs, the screen may go blank while the power LED is on. Refer to the video card manual and adjust the screen as follows.

Table 1. Preset Timing

Display Mode	Horizontal Frequency (kHz)	Vertical Frequency (Hz)	Pixel Clock (MHz)	Sync Polarity (H/V)
IBM, 640 x 350	31.469	70.086	25.175	+/-
IBM, 640 x 480	31.469	59.940	25.175	-/-
IBM, 720 x 400	31.469	70.087	28.322	-/+
MAC, 640 x 480	35.000	66.667	30.240	-/-
MAC, 832 x 624	49.726	74.551	57.284	-/-
MAC, 1152 x 870	68.681	75.062	100.000	-/-
VESA, 640 x 480	37.500	75.000	31.500	-/-
VESA, 640 x 480	37.861	72.809	31.500	-/-
VESA, 800 x 600	35.156	56.250	36.000	-/-
VESA, 800 x 600	37.879	60.317	40.000	+/+
VESA, 800 x 600	46.875	75.000	49.500	+/+
VESA, 800 x 600	48.077	72.188	50.000	+/+
VESA, 1024 x 768	48.363	60.004	65.000	-/-
VESA, 1024 x 768	56.476	70.069	75.000	-/-
VESA, 1024 x 768	60.023	75.029	78.750	+/+
VESA, 1152 x 864	67.500	75.000	108.000	+/+
VESA, 1280 x 1024	60.000	60.000	108.000	+/+
VESA, 1280 x 1024	79.976	75.025	135.000	+/+
VESA, 1440 x 900	55.935	59.887	106.500	-/+
VESA, 1440 x 900	70.635	74.984	136.750	-/+

### Horizontal Frequency

The time to scan one line connecting the right edge to the left edge of the screen horizontally is called Horizontal Cycle and the inverse number of the Horizontal Cycle is called Horizontal Frequency. Unit: kHz

### Vertical Frequency

Like a fluorescent lamp, the screen has to repeat the same image many times per second to display an image to the user. The frequency of this repetition is called Vertical Frequency or Refresh Rate. Unit: Hz

## 14-5 Panel Description

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LT140X1-002	BN07-00004A	SA	BN68-00239H	-
SEC	LT150XS-L01	BN07-00009A	SB		-
SEC	LT150XS-L01-B	BN07-00022A	SC		-
SEC	LTM150XS-L02	BN07-00005A	SD		-
SEC	LT181E2-132	BN07-00001A	SE		-
SEC	LT150XS-T01	BN07-00010A	SF		-
SEC	LTM181E3-132	BN07-00019A	SG		-
SEC	LT170E2-131	BN07-10001D	SH		-
SEC	LT181E2-131	BN07-10001E	SJ		-
SEC	LTM170E4-L01	BN07-00018A	SK		-
SEC	LTM240W1-L01	BN07-00015A	SL		-
SEC	LTM213U3-L01	BN07-00016A	SM		-
SEC	LTM150XH-L01	BN07-00026A	SN		-
SEC	LTM150XH-L03	BN07-00027A	SP		-
SEC	LTM150XS-L01	BN07-00032A	SQ		DELL(ZPD)
SEC	LTM181E4-L01	BN07-00034A	SR		PVA
SEC	LTM170EH-L01	BN07-00036A	SS		TN
SEC	LTM170E5-L01	BN07-00037A	SU		PVA
SEC	LTM150XH-L11	BN07-00041A	SV		-
SEC	LTM213U4-L01	BN07-00039A	SW		PVA
SEC	LTM150XH-L01(ZPD)	BN07-00045A	SX		ZPD
SEC	LTM150XH-L04	BN07-00046A	SY		"New panel with high brightness"
SEC	LTM170W1-L01	BN07-00047A	SZ		Panel for TV
SEC	LTM150XH-L06	BN07-00053A	EA		Panel for TV/ High luminance for 450cd , SONY&EOS Team Panel for TV
SEC	LTM153W1-L01	BN07-00054A	EB		Use NIKE MODEL
SEC	LTM170EH-L05	BN07-00055A	EC		Panel EOS proj. for high brightness of 17" EH-L05
SEC	LTM170E5-L03	BN07-00056A	ED		Dell 1702FP pro. E4. EH mechanicalCompatible
SEC	LTM190E1-L01	BN07-00057A	EE		DELL 1900 FP
SEC	LTM181E5-L01	BN07-00061A	EF		18" narrow bezel GH18PS
SEC	LTM150XP-L01	BN07-00065A	EG		AMLCD PVA PANEL
SEC	LTM240W1-L02	BN07-00062A	EH		Panel for 15" Wide TV
SEC	LTM170EU-L01	BN07-00071A	EJ		Slim design, TN
SEC	LTM170E5-L04	BN07-00072A	EK		E5-L04 6 bits FRC... for IBM
SEC	LTA220W1-L01	BN07-00074A	EL		Panel for 22" TV
SEC	LTM170E6-L02	BN07-00075A	EM		AMLCD Narrow & slim design 17" PVAmode
SEC	LTM170W1-L01	BN07-00082A	EN		LTM170W1-L01 ZPD panel
SEC	LTM170EH-L01	BN07-00080A	EP		LTM170EH-L01 ZPD panel
SEC	LTM170E5-L01	BN07-00081A	EQ		LTM170E5-L01 ZPD panel
SEC	LTM170EH-L05	BN07-00083A	ER		LTM170EH-L05 ZPD panel
SEC	LTM170E5-L03	BN07-00084A	ES		LTM170E5-L03 ZPD panel
SEC	LTM170EU-L01	BN07-00085A	ET		LTM170EU-L01 ZPD panel
SEC	LTM170E5-L04	BN07-00086A	EU		LTM170E5-L04 ZPD panel
SEC	LTM170E6-L02	BN07-00087A	EV		LTM170E6-L02 ZPD panel
SEC	LTM150XH-L06	BN07-00091A	EW		"Color coordinates change for LCD TV"
SEC	LTM153W1-L01	BN07-00092A	EX		AMLCD WIDE 15",9/10
SEC	LTM170W1-L01	BN07-00100A	EY		"Color Coordinates change code management"
SEC	LTM170EH-L05	BN07-00097A	EZ		"LTM170E5-L05 Color Coordinates Change Panel Code"
SEC	LTA400W1-L01	BN07-00109A	S1		"PANEL of AMLCD 40"" TV"
SEC	LTM153W1-L01	BN07-00110A	S2		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM150XH-L06	BN07-00111A	S3		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM170W1-L01	BN07-00112A	S4		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM170EH-L05	BN07-00113A	S5		"Color coordinates change 0.280/0.290, 10000k & ZPD Panel"
SEC	LTM220W1-L01	BN07-00114A	S6		"ZPD Panel for AMLCD 22"" TV"

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
SEC	LTM150XH-L06	BN07-00117A	S7		"ZPD Panel code"
SEC	LTM153W1-L01	BN07-00118A	S8		"ZPD Panel code"
SEC	LTM170WP-L01	BN07-00119A	S9		"PVA Panel for NIKE"
SEC	LTM213U4-L01	BN07-00039A	E1		21.3" NARROW
SEC	LTA260W1-L01	BN07-00121A	E2		VENUS
SEC	LTA220W1-L01	BN07-00074B	E3		"Panel B-level panel code for 22" TV Panel "
SEC	LTA320W1-L01	BN07-00108A	E4		"Panel for AMLCD 32" TV "
SEC	LTM213U4-L01	BN07-00124A	E5		NARROW BEZEL 21 " PANEL
SEC	LTM170E6-L04	BN07-00129A	E6		"HIGHLAND 17" LOW PANEL (Panel only for TCO03)"
SEC	LTM190E1-L01	BN07-00088A	E7		LTM190E1-L01 ZPD panel
SEC	M150X4-L06	BN07-00137A	E8		15" Narrow & Slim panel
SEC	LTA170V1	BN07-00139A	E9		"17" Panel for Muse 4:3 VGA TV"
SEC	LTM190E1-L02	BN07-00128A	E10		"New Panel from AMLCDI, Specification : 6bit Driver IC"
SEC	LTM170EX-L01	BN07-00143A	E11		"Development new Panel from AMLCD"
SEC	LTM170E8-L01	BN07-00144A	E12		"Development new Panel from AMLCD"
SEC	LTM170E6-L04	BN07-00129B	E13		"ZPD panel for AMLCD (Panel only for TCO03)"
SEC	LTA320W1-L02	BN07-00108B	E14		"Creat B-level Panel code for AMLCD 32" TV"
SEC	LTM190E1-L03	BN07-00151A	E15		"Development new 19" Panel form AMLCD (Panel only for TCO03)"
SEC	LTM240W1-L03	BN07-00134A	E16		"AMLCD 24" panel development"
SEC	LTM190E1-L02	BN07-00128B	E17		"New Panel from AMLCD, Specification : 6bit Driver IC(ZPD)"
SEC	LTM190E4-L01	BN07-00145A	E18		"AMLCD 24" new panel development"
SEC	LTM170E8-L01	BN07-00158A	E19		"ZPD code derivation"
SEC	LTM170EX-L01	BN07-00159A	E20		"ZPD code derivation"
SEC	LTM190E1-L03	BN07-00151B	E21		"Creat new panel code for AMLCD 19" (Panel only for TCO03)"
SEC	LTA460H1-L01	BN07-00157A	E22		"creat panel code for AMLCD 46" TV "
SEC	LTM170EU-L11	BN07-00160A	E23		"creat new panel code for AMLCD 17" (Panel only for TCO03)"
SEC	LTM240W1-L03	BN07-00134B	E24		"24" panel ZPD code derivation"
SEC	LTM190E4-L01	BN07-00145B	E25		"AMLCD 19" ZPD Panel code derivation"
SEC	LTM240W1-L03	BN07-00134B	E26		24" panel ZPD code derivation
SEC	LTM150XO-L01	BN07-00164A	E27		AMLCD 15" XO-L01 new panel development
SEC	LTM150XO-L01	BN07-00164B	E28		AMLCD 15" XO-L01 ZPD code derivation
SEC	LTM170EU-L11	BN07-00160B	E29		AMLCD 17" NEW panel code derivation
SEC	LTA320W2-L01	BN07-00172A	SPZ		AMLCD 32" NEW panel
SEC	LTM213U4-L01	BN07-00124B	SPZ		21.3" Narrow PANEL ZPD Panel derivation
SEC	LTM170EU-L11	BN07-00189A	STH		AMLCD EU-L11 Pb free panel code derivation
SEC	LTM170EU-L11	BN07-00189B	STZ		AMLCD EU-L11 Pb free panel ZPD code derivation
SEC	LTM240W1-L04	BN07-00188A	SPH		24" A-DCC new panel development
SEC	LTM190EX-L01	BN07-00191A	STH		AMLCD 19" TN new Panel
SEC	LTM190EX-L02	BN07-00191B	STZ		AMLCD 19" TN new Panel ZPD derivation
SEC	LTA230W1-L02	BN07-00184A	SPZ		AMLCD 23" 16:9 new Panel
SEC	LTA260W2-L01	BN07-00185A	SPZ		AMLCD 26" 16:9 new Panel
SEC	LTM240M1-L01	BN07-00195A	SPH		24" panel with high brightness development
SEC	LTA400W2-L01	BN07-00186A	SPZ		AMLCD 40" 16:9 new Panel
SEC	LTM150XO-L01	BN07-00197A	STH		AMLCD 15" XO-L01 Pb free panel code
SEC	LTM150XO-L01	BN07-00197B	STZ		AMLCD 15" XO-L01 Pb free panel ZPD code
SEC	LTM170EU-L21	BN07-00202A	STZ		AMLCD EU-L21 ZPD new code derivation
SEC	LTA460W2-L03	BN07-00187A	SPZ		BEETOVEN 46"ZPD new Panel
CPT	CLAA150XG09	BN07-00141A	PA		CPT 15" Monitor new panel development
CPT	CLAA170EA02	BN07-00148A	PB		17" CPT NEW development panel
CPT	CLAA170EA02	BN07-00148B	PC		17" CPT ZPD panel code derivation
CPT	CLAA150XG09	BN07-00141B	PTZ		"CPT 15" panel ZPD code derivation (GOYA-PJT)"
CPT	CLAA150XP01	BN07-00173A	PTH		CPT 15" PSWG code derivation
CPT	CLAA150XP01	BN07-00173B	PTZ		CPT 15" PSWG panel ZPD code

## 14 Reference Infomation

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
CPT	CLAA170EA07	BN07-00174A	PTH		"CPT 17"" PSWG panel code derivation?
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17"" PSWG type new Panel code""
CPT	CLAA170EA07	BN07-00174B	PTZ		CPT 17" PSWG type new Panel code
TOSHIBA	LTM15C419(A)	BN07-00002A	TA		-
TOSHIBA	LTM15C423(B)	BN07-00006A	TB		-
TOSHIBA	LTM18C161	BN07-00008A	TC		-
TOSHIBA	LTM15C443	BN07-00031A	TD		-
TOSHIBA	LTM15C458	BN07-00043A	TE		-
TOSHIBA	LTM15C458S	BN07-00077A	TF		"TSB 15"" high brightness Panel"
TOSHIBA	LTM15C458	BN07-00078A	TG		Toshiba ZPD panel
TOSHIBA	LTM15C458S	BN07-00099A	TH		TSB LTM15C458S ( ZPD )
HANNSTAR	HSD150MX41A(A)	BN07-00020A	NA		"TTL type"
HANNSTAR	HSD150MX12	BN07-00030A	NB		"TTL type"
HANNSTAR	HSD170ME13	BN07-00180A	NTH		Hannstar 17" TN new panel development
HANNSTAR	HSD170ME13	BN07-00180B	NTZ		Hannstar 17" TN new panel development ZPD code derivation
TORISAN	TM150XG-22L03(A)	BN07-00021A	RA		-
TORISAN	TM150XG-26L06	BN07-00042A	RB		-
TORISAN	TM181SX-76N01	BN07-00048A	RC		-
TORISAN	TM150XG-26L06	BN07-00059A	RD		15" XGA TN MODE(ZPD)
TORISAN	TM290WX-71N31	BN07-00063A	RE		"RS24NS (TORISAN 29"" NEW PANEL)"
TORISAN	TM396WX-71N31	BN07-00064A	RF		"RS24NS (TORISAN 40"" NEW PANEL)"
TORISAN	TM150XG-26L09	BN07-00073A	RG		"Panel for 15"" TV"
TORISAN	TM150XG-26L10	BN07-00089A	RH		"L10(change except D/I/C) ZPD"
TORISAN	TM150XG-26L10	BN07-00090A	RJ		L10 NORMAL
TORISAN	TM190SX-70N01	BN07-00098A	RK		Torisan 19" Panel
TORISAN	TM181SX-76N01	BN07-00106A	RL		ZPD Panel code
TORISAN	TM190SX-70N01	BN07-00107A	RM		ZPD Panel code
TORISAN	TM290WX-71N31	BN07-00115A	RN		"Color Coordinates change panel for TORISAN 29"" TV"
TORISAN	TM396WX-71N31	BN07-00116A	RP,Q		"Color Coordinates change panel for TORISAN 40"" TV"
TORISAN	TM220WX-71N31	BN07-00125A	RR		"Development TORISAN 22"" TV PANEL (ZPD)"
TORISAN	TM220WX-71N31	BN07-00127A	RS		"Development TORISAN 22"" TV PANEL (HPD)"
TORISAN	TM396WX-71N32A	BN07-00150A	RT		120V inverter Exclusive panel
TORISAN	TM190SX-70N02	BN07-00154A	RMH		Torisan 6bit panel code Derivation
TORISAN	TM190SX-70N02	BN07-00154B	RMZ		Torisan 6bit panel code Derivation
SHARP	LQ181E1DG11(A)	BN07-10001C	PA		-
SHARP	LQ150X1LW71	BN07-00067A	PB		SHARP 15" PVA PANEL
HITACHI	TX38D12VC0CAA(A)	BN07-00003A	HA		-
HITACHI	TX43DVCOCAB	BN07-00060A	HB		17" SXGA PVA MODE
HITACHI	TX43D15VC0CAB	BN07-00101A	HC		ZPD Panel
HITACHI	TX51D11VC0CAB	BN07-00122A	HD		20.1" NARROW
HITACHI	TX54D11VC0CAB	BN07-00123A	HE		21.3" NARROW
HITACHI	TX80D12VC0CAB	BN07-00169A	HIZ		"Development new panel for Hitachi 32"" TV (ZPD)"
HITACHI	TX54D11VC0CAB	BN07-00123B	HIZ		Hitachi 21.3"ZPD panel
IBM	ITSX94S	BN07-00017A	IA		-
UNIPAC	UM170E0	BN07-00028A	UA		Loaded by cisdba
HYUNDAI	HT15X13	BN07-00035A	DA		-

Maker	VENDOR P/N	PANEL_CODE	PANEL_ABB	STICKER_CODE	Remarks
HYUNDAI	HT17E11-200	BN07-00049A	DB		TN MODE
HYUNDAI	HT17E11-300	BN07-00093A	DC		HT17E11-300 ZPD panel
HYUNDAI	HT17E11-400	BN07-00094A	DD		HT17E11-400 normal panel
HYUNDAI	HT17E11-400	BN07-00095A	DE		HT17E11-400 ZPD panel code
HYUNDAI	HT17E12	BN07-00096A	DF		HT17E12 ( Narrow & slim Design )
HYUNDAI	HT17E12	BN07-00105A	DG		ZPD Panel code
HYUNDAI	HT15X15-D00	BN07-00146A	DH		"Development for Ares 15"" Hydys TV"
HYUNDAI	HT15X15-D01	BN07-00146B	DJ		"Derivation panel HPD for Ares 15"" Hydys TV "
HYUNDAI	HT17E13-100	BN07-00167A	DTH		"PINEHURST-2(IBM) PJT 17"" HYDIS PANEL Derivation"
HYUNDAI	HT17E13-100	BN07-00167B	DTZ		"PINEHURST-2(IBM) Hydys 17"" ZPD code Derivation"
ACER	L170E3	BN07-00044A	AA		TN(ADT)
ACER	M170EN05	BN07-00076A	AB		AU 17" Panel (Narrow & slim design)
ACER	M170EN05	BN07-00102A	AC		ZPD Panel code
ACER	M190EN02	BN07-00170A	AMH		"AU Monitor 19"" new panel development (P19-1S)"
ACER	M190EN02	BN07-00170B	AMZ		"AU 19"" ZPD code derivation (ZPD)"
ACER	M170EN06	BN07-00171A	ATH		"AU Monitor 17"" New panel development"
ACER	T260XW01	BN07-00163A	AMZ		"AU 26"" new panel developm
(NF26EO)"					
ACER	A201SN01	BN07-00177A	ATZ		"AU TV panel 20.1"" TN SVGA new panel development"
ACER	M170EN06	BN07-00171B	ATZ		"AU Monitor 17"" ZPD code Derivation
ACER	T315XW01	BN07-00194A	AMZ		AU 32" new
ACER	M170EG01	BN07-00192A	ATH		AU TN PSWG type new Panel code
ACER	M170EG01	BN07-00192B	ATZ		AU TN PSWG type NEW panel code derivation
CHIMEI	M170E3-L01	BN07-00050A	CA		TN PANEL
CHIMEI	M150X3-L01	BN07-00051A	CB		COMPATIBLE
CHIMEI	M170E4-L01	BN07-00052A	CC		MVA PANEL
CHIMEI	M150X2-L01	BN07-00066A	CD		CHIMEI 15" PVA PANEL
CHIMEI	M150X3-L01	BN07-00079A	CE		Chimei ZPD panel
CHIMEI	M170E3-L01	BN07-00103A	CF		ZPD Panel code
CHIMEI	M170E4-L01	BN07-00104A	CG		ZPD Panel code
CHIMEI	V296W1-L01	BN07-00120A	CH		MVA
CHIMEI	M170E6-L02	BN07-00126A	CJ		HIGHLAND 17" LOW PANEL
CHIMEI	M190E2-L01	BN07-00131A	CK		GH19AS,BS CHIMEI PANEL
CHIMEI	M150X4-L06	BN07-00137A	CL		15" Narrow & Slim panel
CHIMEI	M170E6-L01	BN07-00133A	CM		"2003-03-11 vendor change"
CHIMEI	M170E6-L01	BN07-00133B	CN		"ZPD derivation panel"
CHIMEI	V201V1-T01	BN07-00135A	CP		"CHIMEI 20.1"" panel development"
CHIMEI	M170E6-L02	BN07-00126B	CQ		"HIGHLAND 17"" LOW PANEL ZPD derivation panel"
CHIMEI	M170E6-L05	BN07-00152A	CR		"CMO 17"" new panel development code"
CHIMEI	M170E6-L05	BN07-00152B	CS		"CMO 17"" ZPD panel code derivation"
CHIMEI	M150X4-L06	BN07-00137B	CT		Chimei 15" Narrow & Slim panel ZPD derivation
CHIMEI	M170E5-L05	BN07-00165A	CTH		CMO 17" new panel development code (GOYA2-PJT)
CHIMEI	M170E5-L05	BN07-00165B	CTZ		CMO 17" ZPD panel(GOYA2-PJT)

## Memo



## 2 Product Specifications

### 2-1 Fashion Feature

- Minimalism Design Something New
- Boltless Model (Clean Cut & Soft Surface)
- New Ball Hinge
- Color Variation. White, Black

### 2-2 Specifications

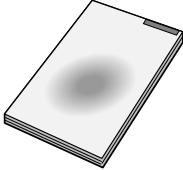
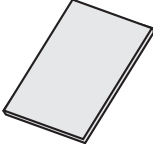
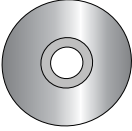
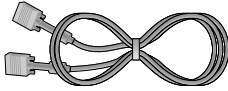

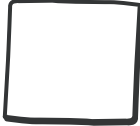
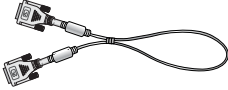
Item	Description
LCD Panel	TFT-LCD panel, RGB vertical stripe, normally black transmissive, 19-Inch viewable, 0.294 (H) x 0.294 (V) mm pixel pitch
Scanning Frequency	Horizontal : 30 kHz ~ 81 kHz (Automatic) Vertical : 56 Hz ~ 75 Hz (UXGA : 60 Hz)
Display Colors	16.2 Million colors
Maximum Resolution	Horizontal : 1440 Pixels Vertical : 900 Pixels
Input Signal	Analog / Digital / Digital with HDCP
Input Sync Signal	Seperate H/V sync, Composite H/V, Sync-on-Green, Automatic synchroniza tion whitout external swith of sync type  Level : TTL level
Maximum Pixel Clock rate	135 MHz
Active Display Horizontal/Vertical	376.3(H) x 301.05(W) mm
AC power voltage & Frequency	AC 90 ~ 264 Volts, 60/50 Hz
Power Consumption	38W (Max)
Dimensions Set (W x D x H)	17.7 x 14.7 x 7.8 inch (449 x 374 x 199 mm) (With stand) 17.7 x 12.8 x 2.6 inch (449 x 325 x 67 mm)
Weight (Set/Package)	4.1kg / 5.4kg
Environmental Considerations	Operating Temperature : 0°F ~ 122°F (0°C ~ 50°C) Operating Humidity : 20% ~ 90% Storage temperature : -4°F ~ 149°F (-20°C ~ 65°C) Storage Humidity : 5% ~ 90%

- Designs and specifications are subject to change without prior notice.

## 2-4 Spec Comparison

Model	LS19PEJ	LS19PFW
Design		
Frequency Horizontal Vertical Display Color	30 ~ 81 kHz 60 ~ 75 Hz 16,2M colors	30 ~ 81 kHz 60 ~ 75 Hz 16,7M colors
PC Resolution Maximum mode	1440 x 900 @ 60 Hz 1440 x 900 @75 Hz	1440 x 900 @ 60 Hz 1440 x 900 @75 Hz
Input Signal	Analog / Digital / Digital with HDCP	Analog / Digital
Sync Signal	Seperate, Composite, Sync-on-Green	Seperate, Composite, Sync-on-Green
Power Consumption	42W	42W
Normal Power Saving	< 1W	< 1W
Response Time	2ms(G to G)	2ms(G to G)
Anion Option	None	None
Magic Color	Support	Support

## 2-5 Option Specification

Item	Item Name	CODE.NO	Remark
	Quick Setup Guide	BH68-00376L	
	Warranty Card (Not available in all locations)	BH68-00633A	
	User's Guide, Monitor Driver, Natural Color software, MagicTune™ software	BN59-00585N	
	D-Sub(15 Pin) Cable	BN39-00244B	
	Power Cord	3903-000042	
	Cleaning Cloth	BN63-02368A	(Black / High Glossy Model only)
	DVI Cable	BN39-00246F	Sold separately

## Memo

## 3 Alignments and Adjustments

This section of the service manual explains how to use the DDC MANAGER JIG.  
This function is needed for AD board change and program memory (IC110) change.


### 3-1 Required Equipment

The following equipment is necessary for adjusting the monitor:

- Computer with Windows 95, Windows 98, Windows 2000, Windows XP or Windows NT
- MTI-2055, 2058, 2059 DDC Manager Jig

### 3-2 Automatic Color Adjustment

To input video, use 16 gray or any pattern using black and white.

1. Select english for OSD language.
2. Press the "  (Enter/Source)" key for 5 seconds.

### 3-3 DDC EDID Data Input

1. Input DDC EDID data when replacing AD PCB.
2. Receive/Download the proper DDC file for the model from HQ quality control department.  
Install the below jig (Figure 1) and enter the data.

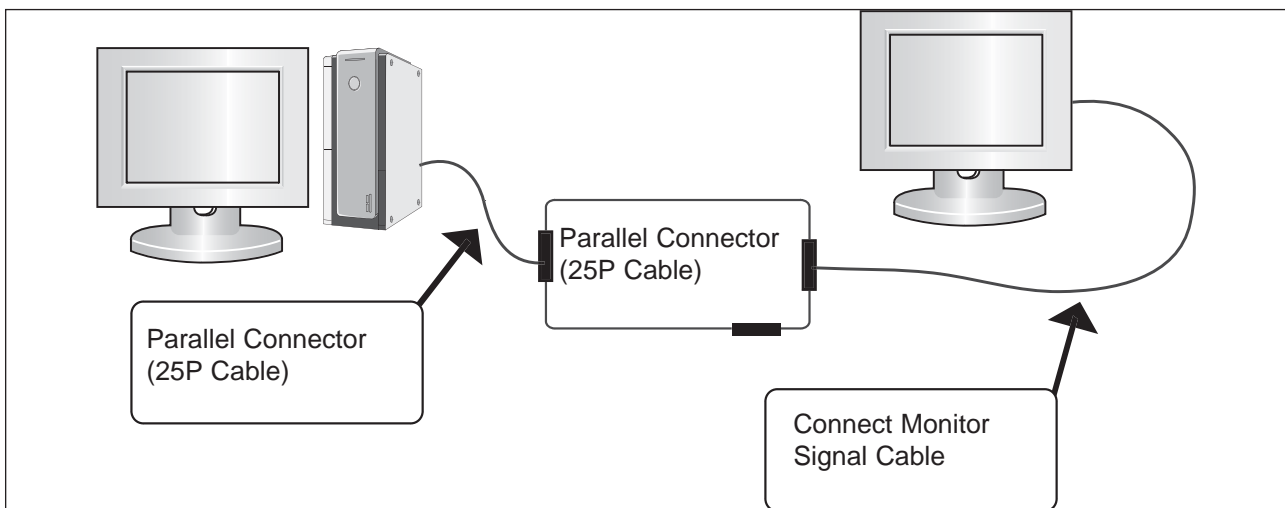



Figure 1.

### 3-4 OSD Adjustment When Replacing Panel

1. Adjust brightness and contrast to 0. Then, press the  (Enter/Source) key for 5 seconds.  
Service function OSD will appear on screen.
2. Press the + key to place the cursor on the panel. Press the menu key for 5 seconds.


### 3-5 OSD Adjustment When Replacing Lamp Only

1. Adjust brightness and contrast to 0. Then, press the exit key for 5 seconds.  
Service function OSD will appear on the screen.
2. Press the + key. Select upper lamp and press the menu key for 5 seconds.  
Then, select lower lamp and press the menu key for 5 seconds.

**Note :** Please be sure to read the following instructions for details on service function.

## 3-6 Service Function Spec.

### 3-6-1 How to Display Service Function OSD

1. The value for brightness and contrast should be changed to zero.
2. Within 5 seconds, press the  (Enter/Source) key.
3. Service function OSD will be displayed.

If you want to disable the service function OSD, you will have to power off.

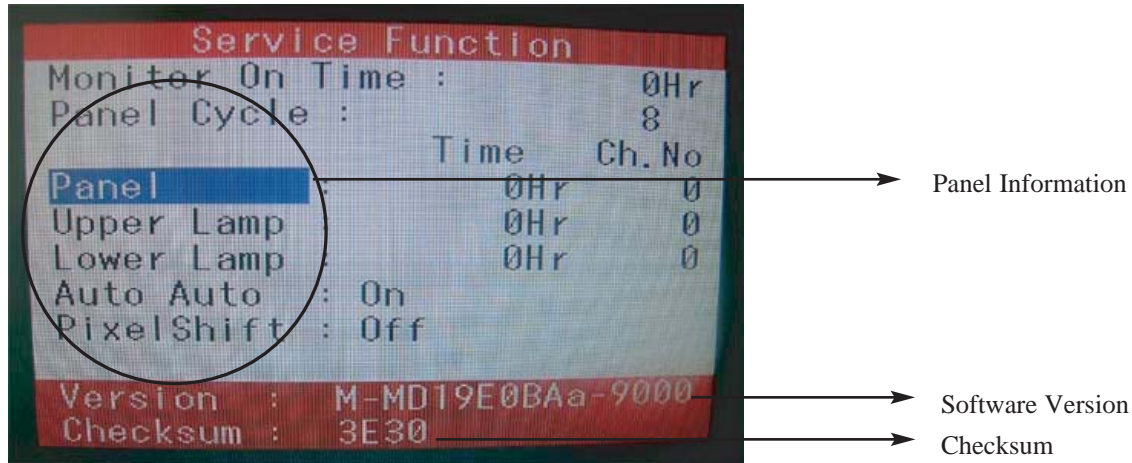


Figure 2. The example of service function OSD

The service function OSD is based on a grid of 29 columns x 12 rows.

The service function OSD consists of panel information, software version and MICOM checksum.

### 3-6-2 How to Control Service Function OSD

1. With the panel selected on OSD, whenever you press the right key, the base color will change to blue from "Panel" to "Upper Lamp", "Lower Lamp".

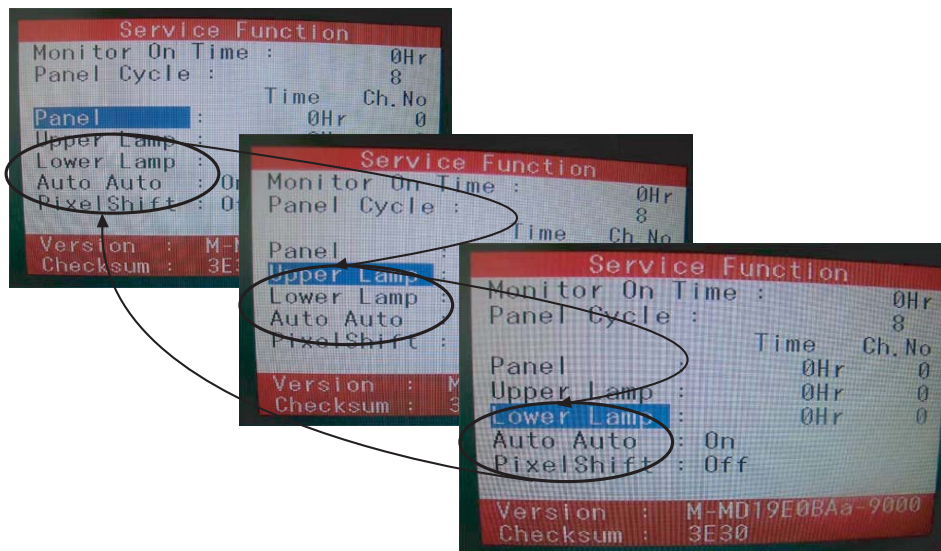


Figure 2.

### 3-6-3 How to Control Service Function OSD

-After changing the panel or lamp, you must reset service function OSD.

-The case of panel change

After changing the panel, press the menu key within 5 seconds,.

Then, panel Ch. No increases one step and the panel time information is reset to zero.

Simultaneously, other information is reset to zero (Upper/Lower lamp, Panel cycle).

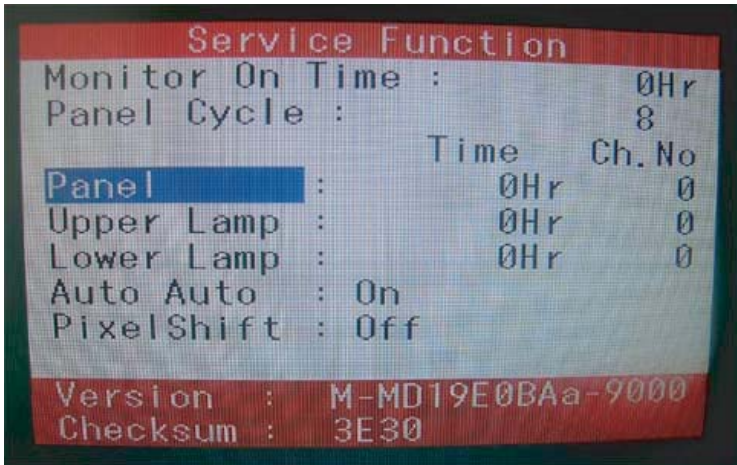


Figure 4.

### 3-6-4 How to Control Service Function OSD

-In the case of Upper Lamp or Lower Lamp change

After changing the Upper Lamp or Lower Lamp,

1. Select the Upper Lamp or Lower Lamp
2. Press the Menu key within an 5 seconds.

Then, Ch. No and time will be reset to zero (selected item only).

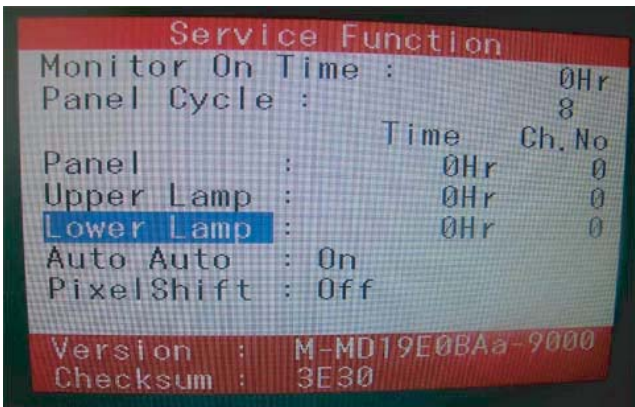
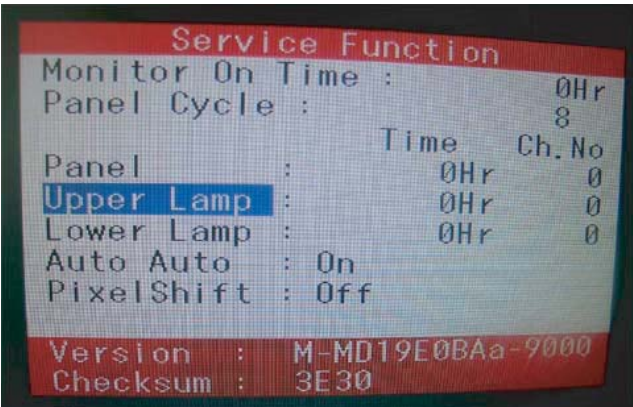
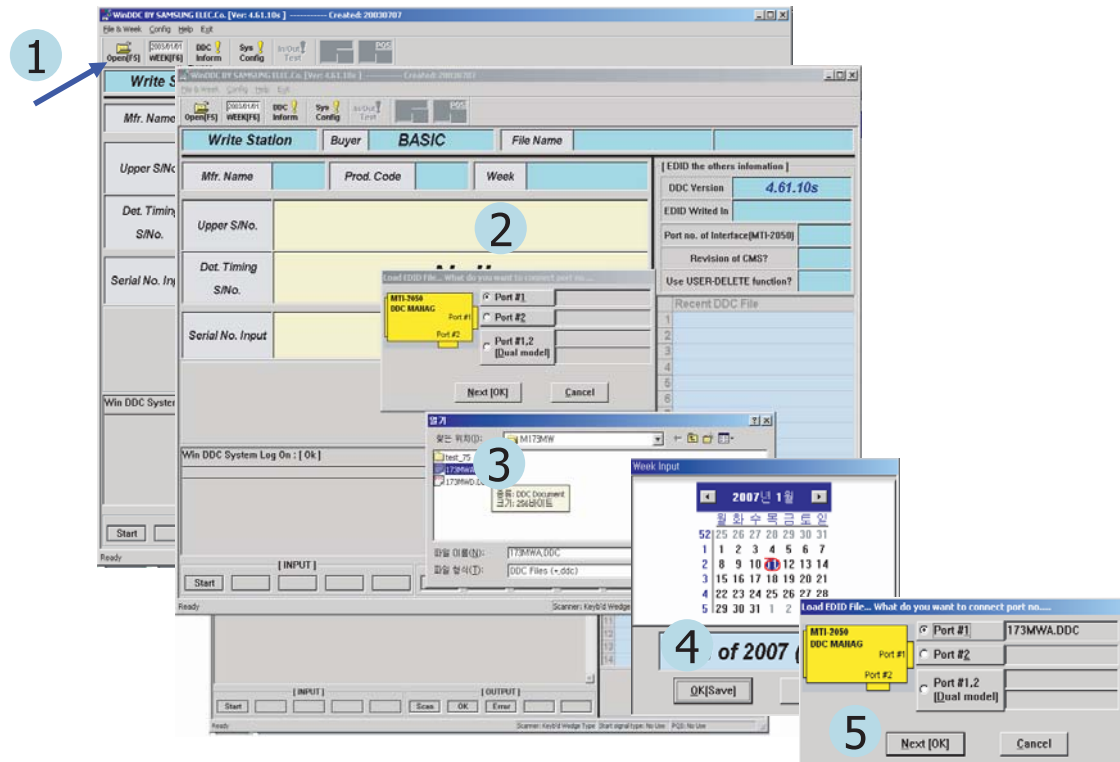


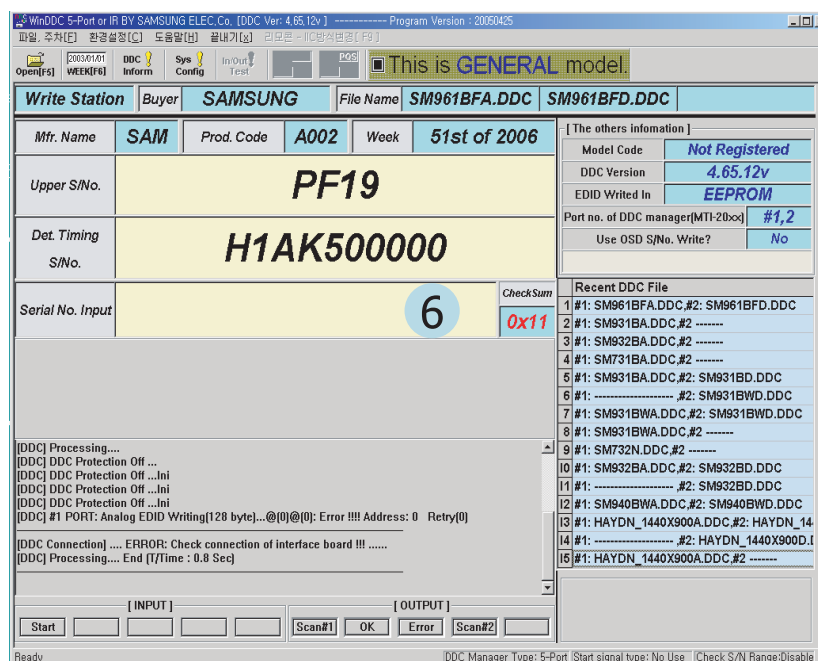
Figure 5, 6.



## 3-7 How to execute DDC



1. Click the Open icon
2. Select Two EDID.
3. Select a DDC file.
4. Select week
5. Click Next (OK).

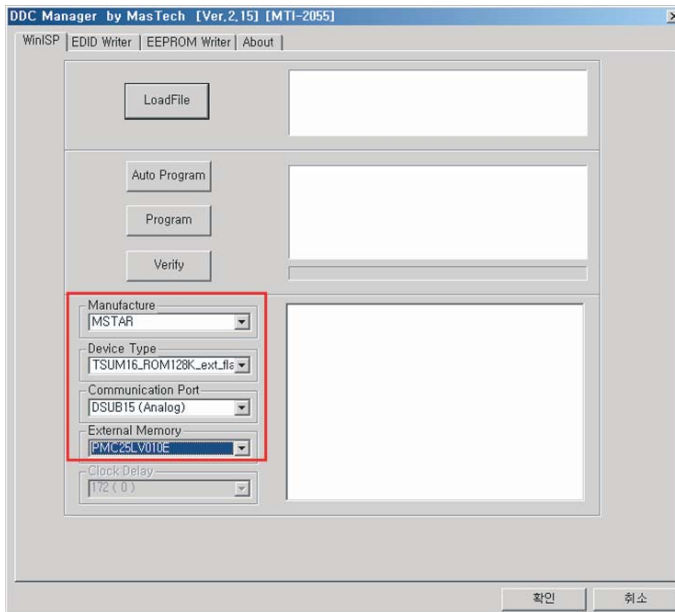


6. Enter the serial number and press the Enter key.

\*After entering the analog data, repeat the procedure above 2 to 5 times to enter digital data.

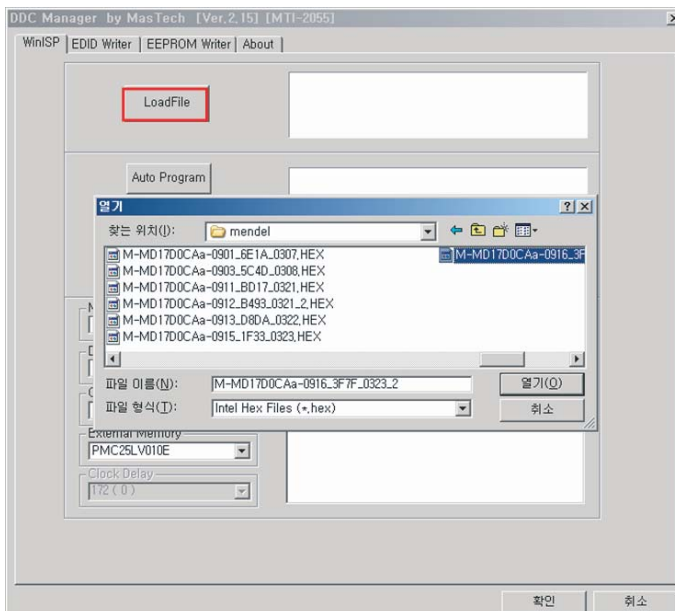
## 3-8 How to execute MCU Code

### 3-8-1 Program Setting - Config Setting



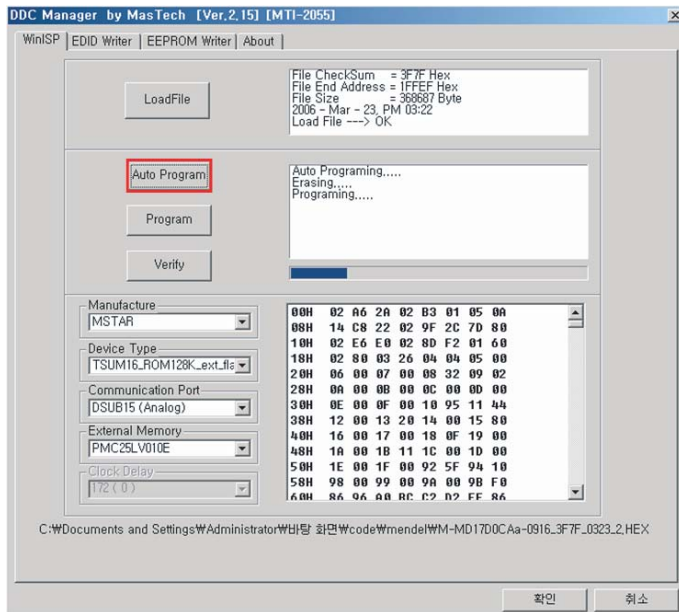
1. Set the options.

- Manufacture : MSTAR
- Device Type :TSUM16\_ROM128K\_ext\_flash
- Communication Port : DSUB15 (Analog)
- External Memory : PMC25LV010E

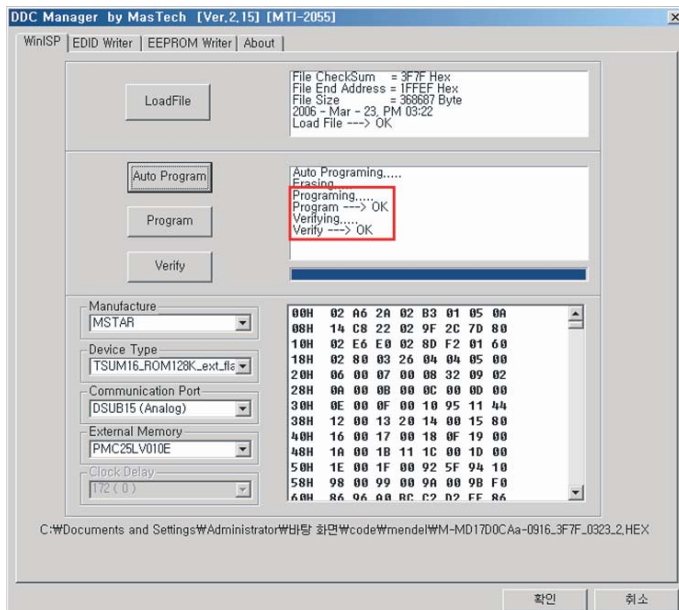


2. Click 'LoadFile' button, and select the MCU code.

### 3 Alignments and Adjustments

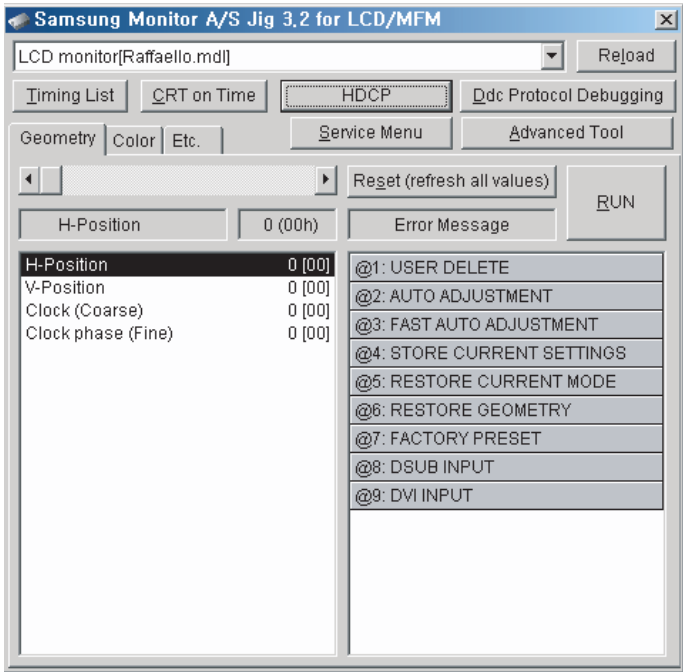


3. Click 'Auto Program' button.

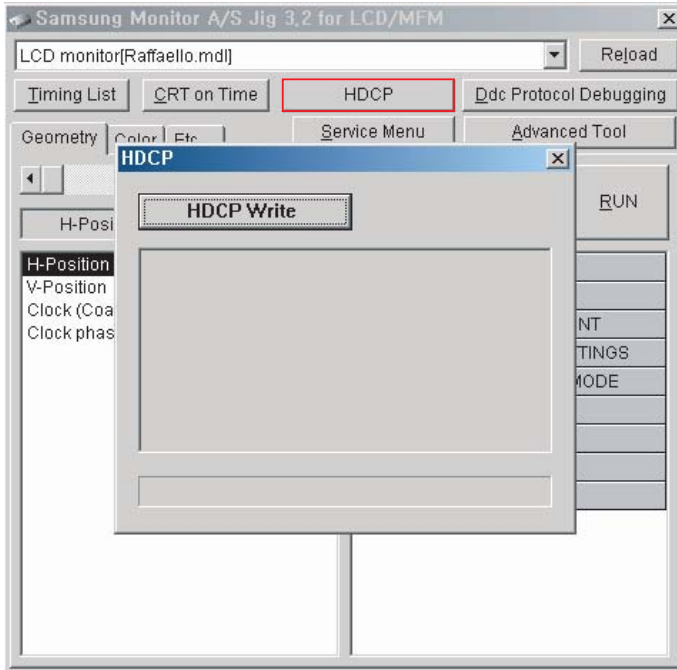


4. If Program and Verify is OK, turn off the hard power and than turn on again.

### 3-9 How to Execute HDCP Code

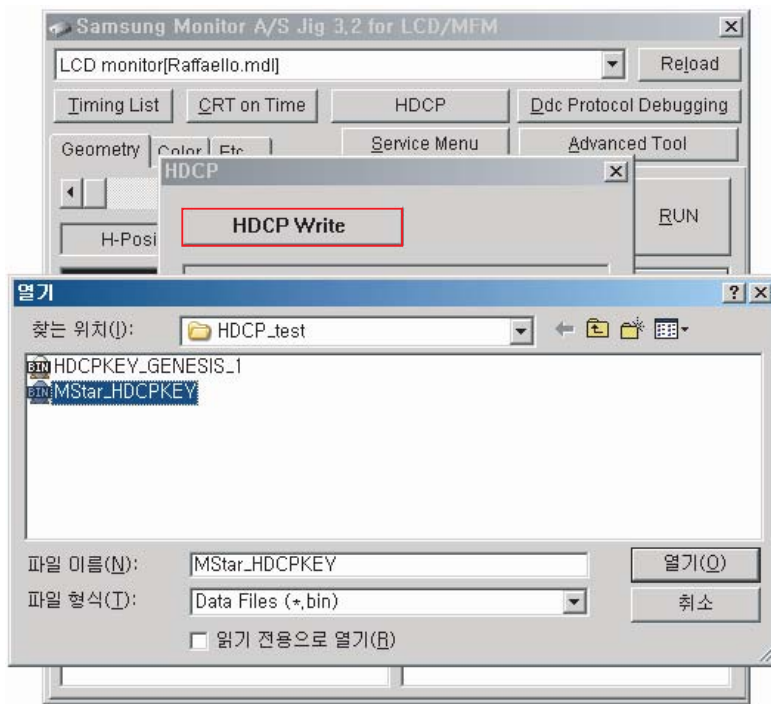


1. Execute 'service.exe'.

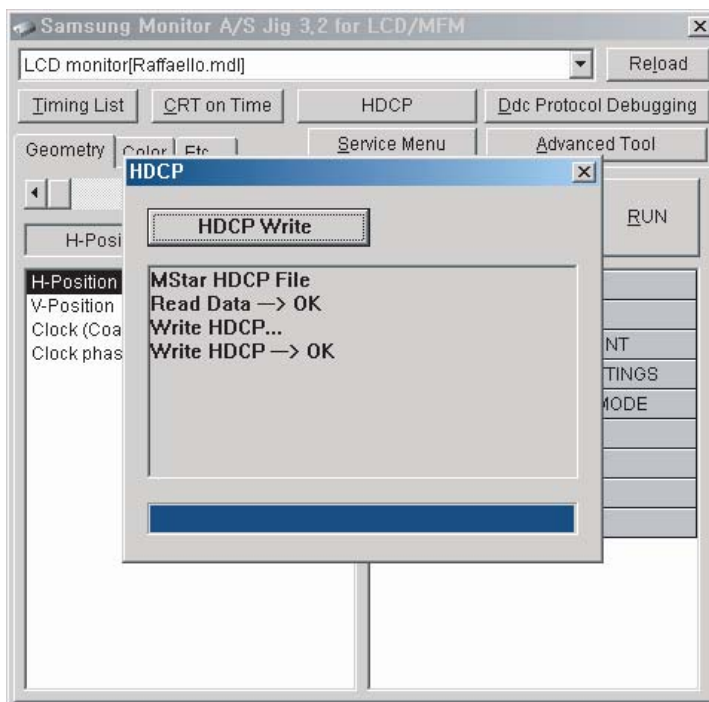


2. Click 'HDCP' button.2. Click 'HDCP' button.

### 3 Alignments and Adjustments




3. Click 'HDCP Write' button and select 'MStar\_HDCPKEY'.

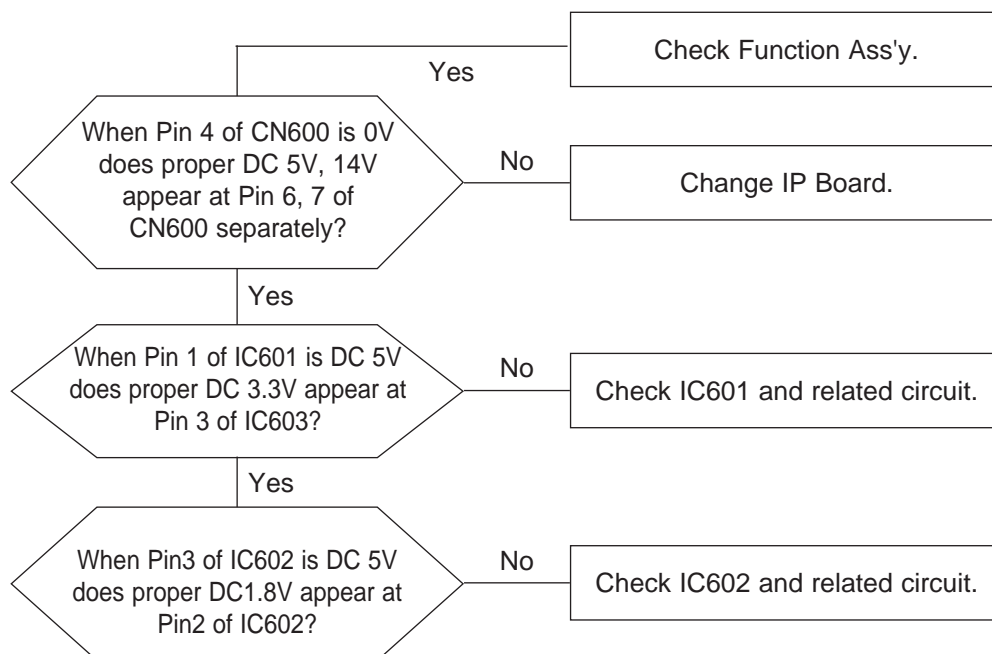


4. HDCP KEY writing is Complete.

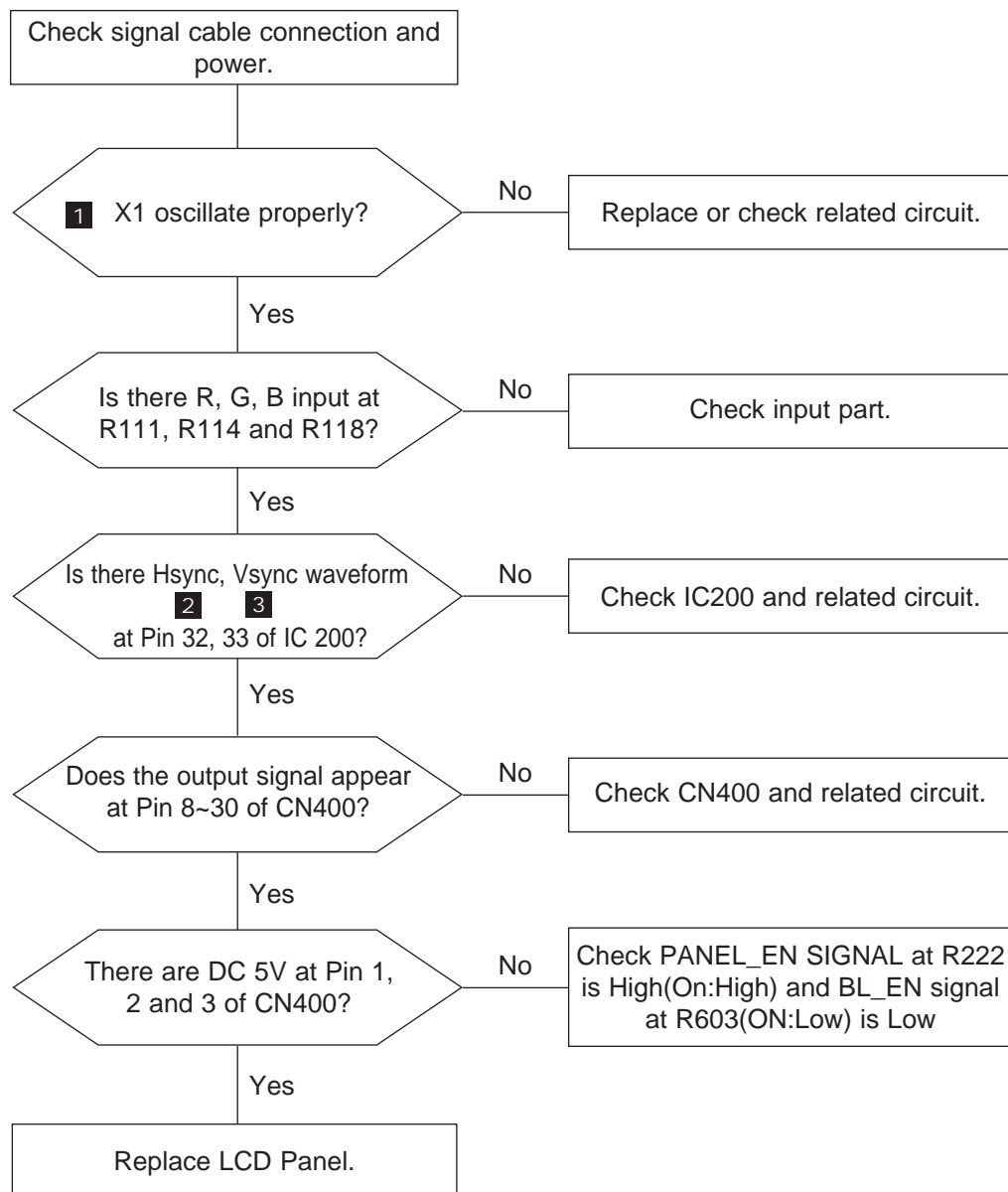
## 4 Troubleshooting

- Notes:
- Before troubleshooting, setup the PC's display as below.
    - Resolution: 1440 x 900
    - H-frequency: 45 kHz
    - V-frequency: 60 Hz
  - If no picture appears, make sure the power cord is correctly connected.
  - Check the following circuits.
    - No raster appears: Function PBA, Main PBA, I/P PBA
    - 5V develop but no screen: Main PBA
    - 5V does not develop: I/P PBA
  - If you push and hold the " (Enter/Source)" button for more than 5 seconds, the monitor automatically returns to the factory preset.

### 4-1 No Power

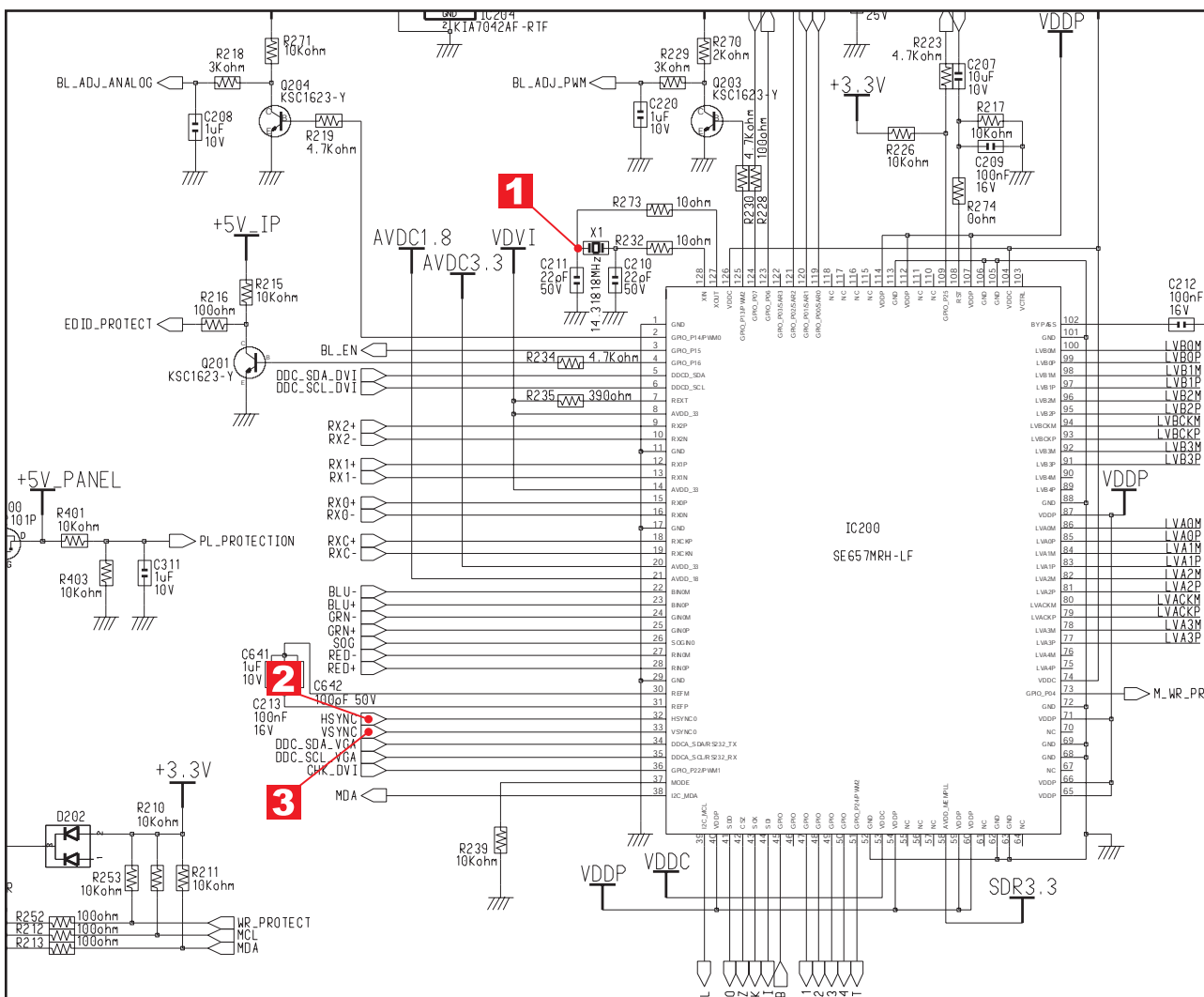
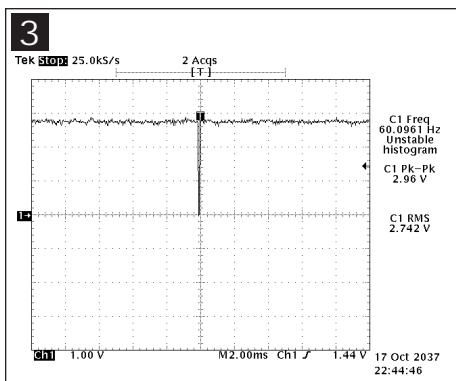
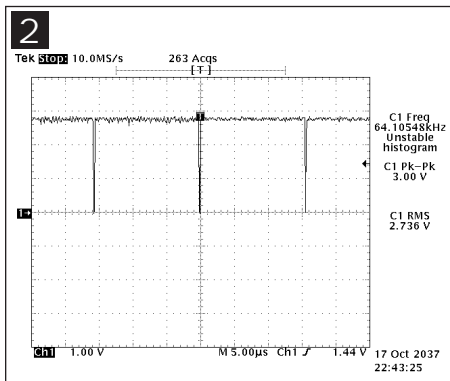
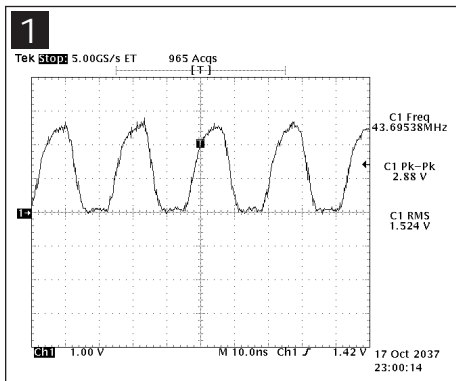


## 4-2 No Video (ANALOG)

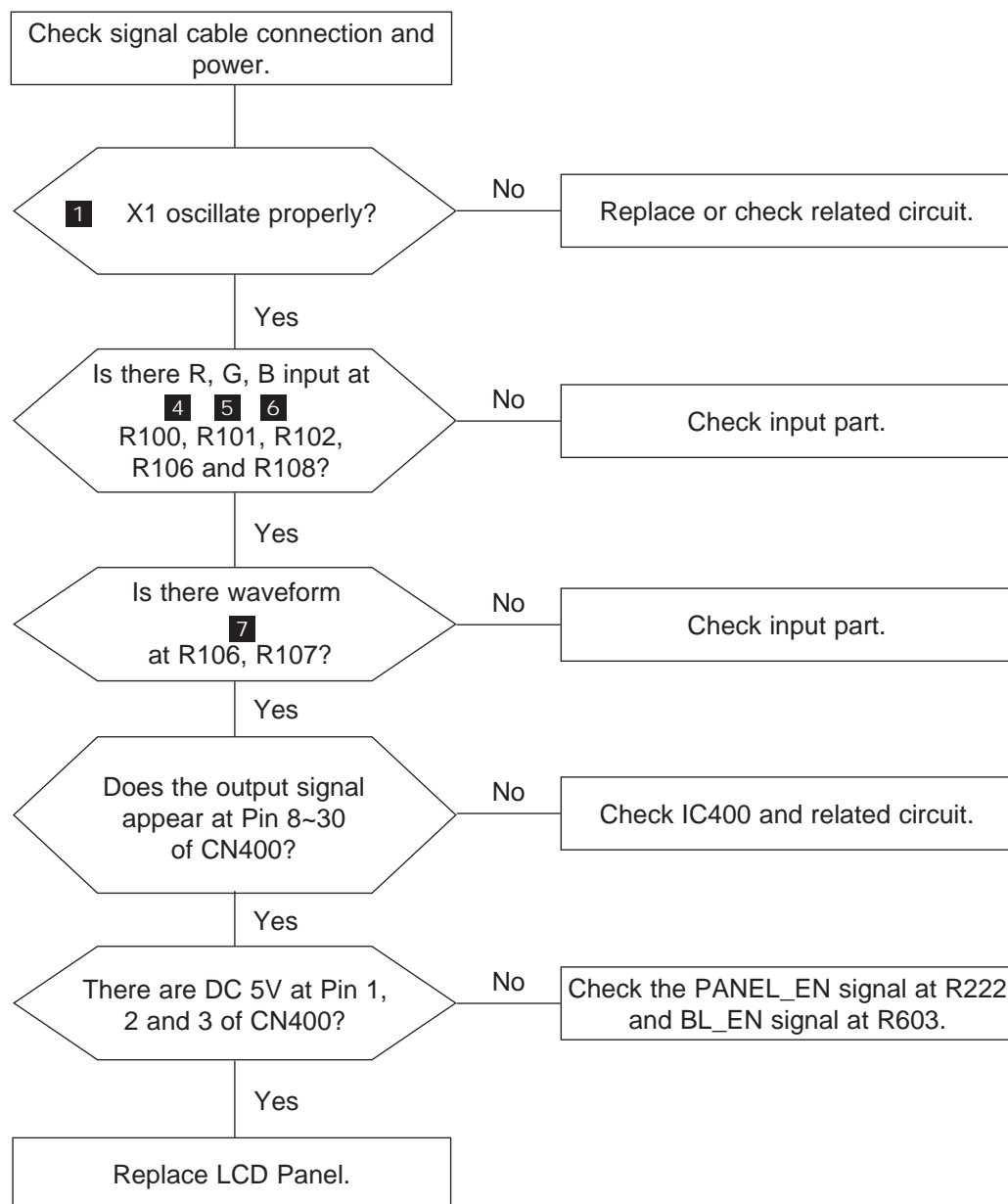




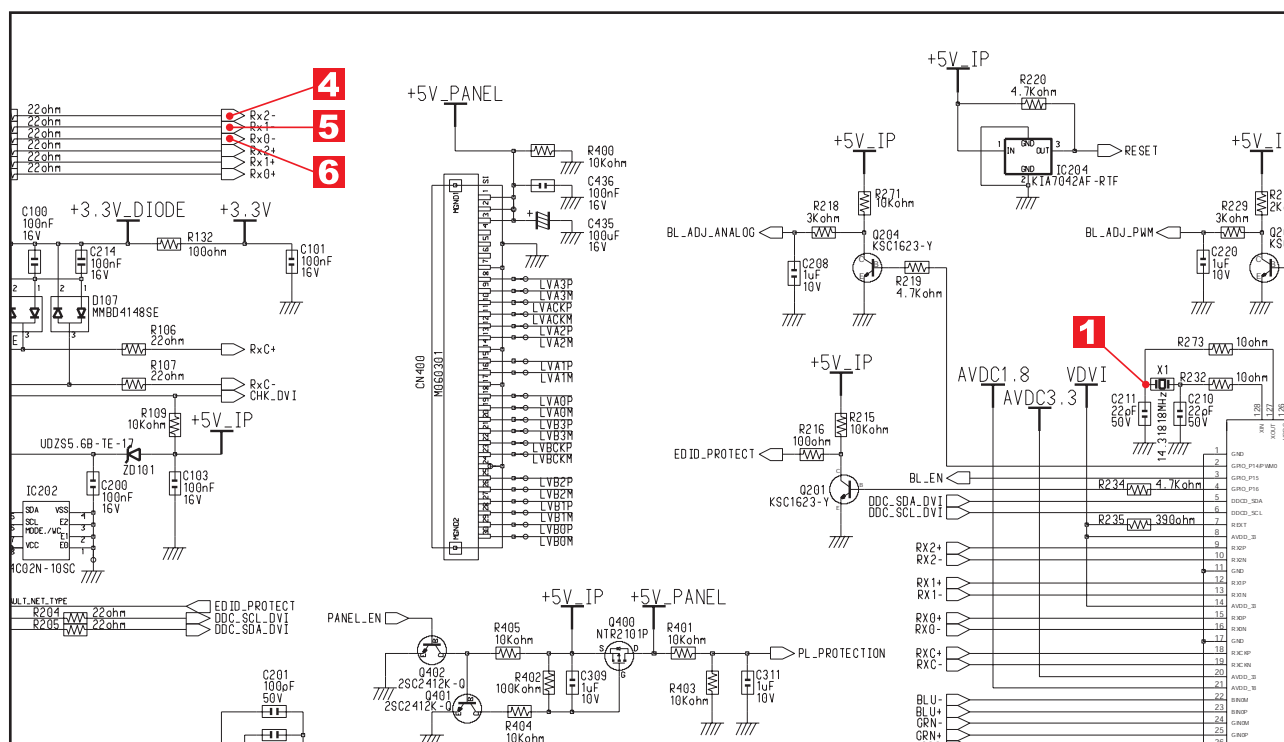
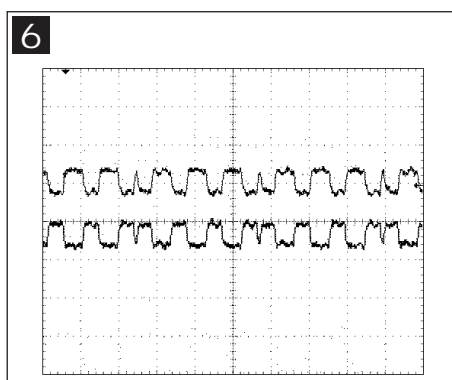
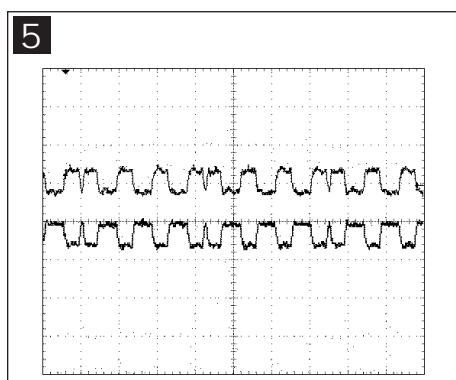
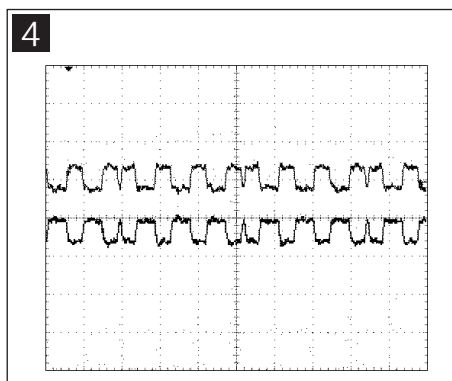
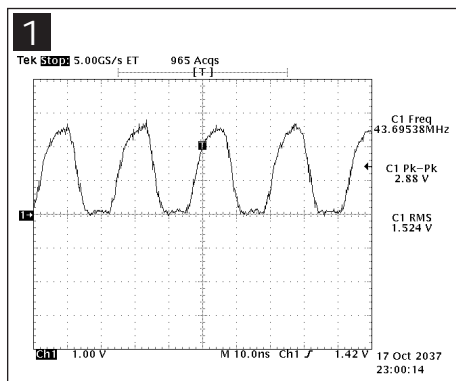
# WAVEFORMS



## 4-3 No Video (DIGITAL")



## WAVEFORMS



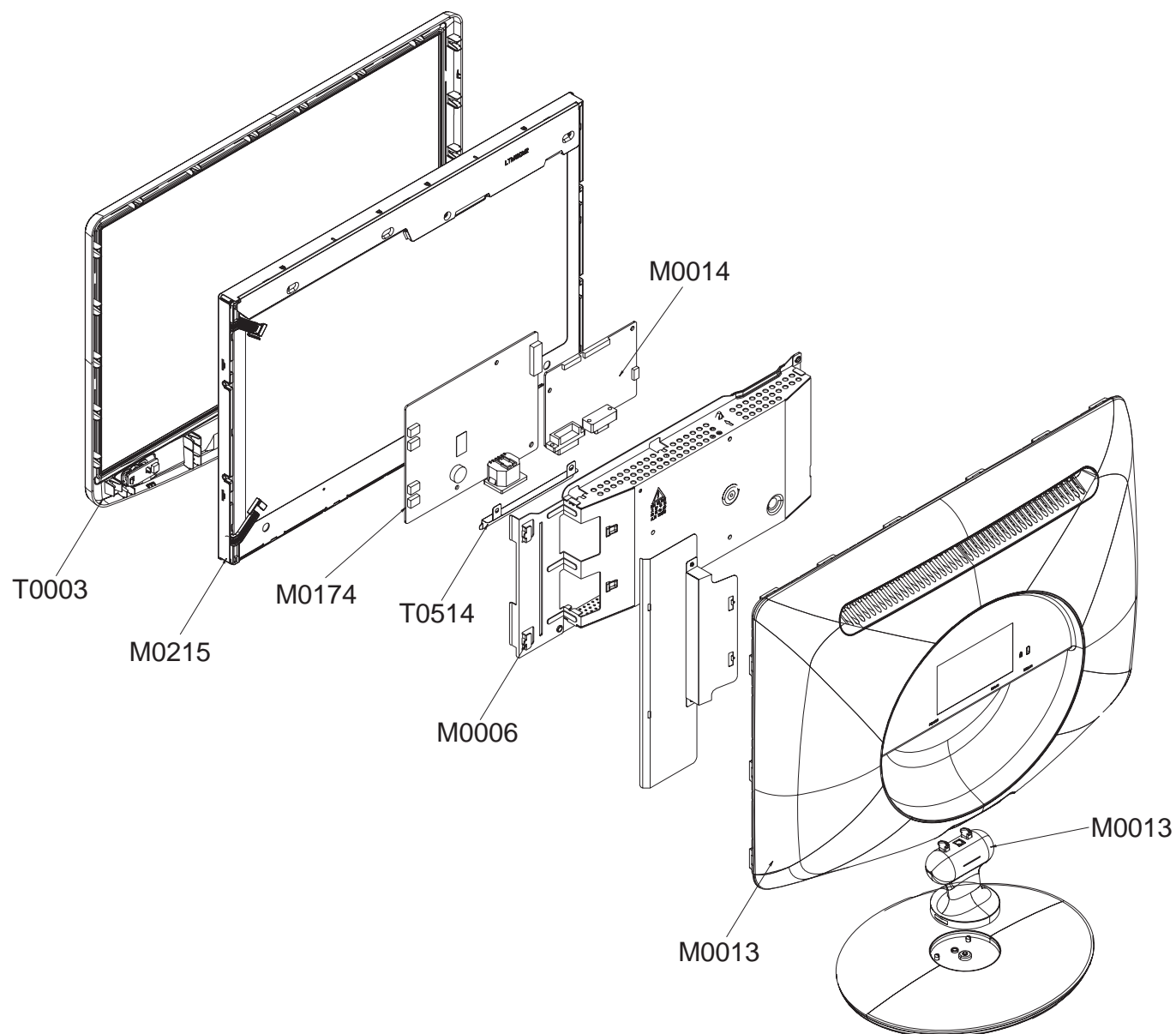
## Memo

## 5 Exploded View and Parts List

-You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr>

### 5-1 Exploded View

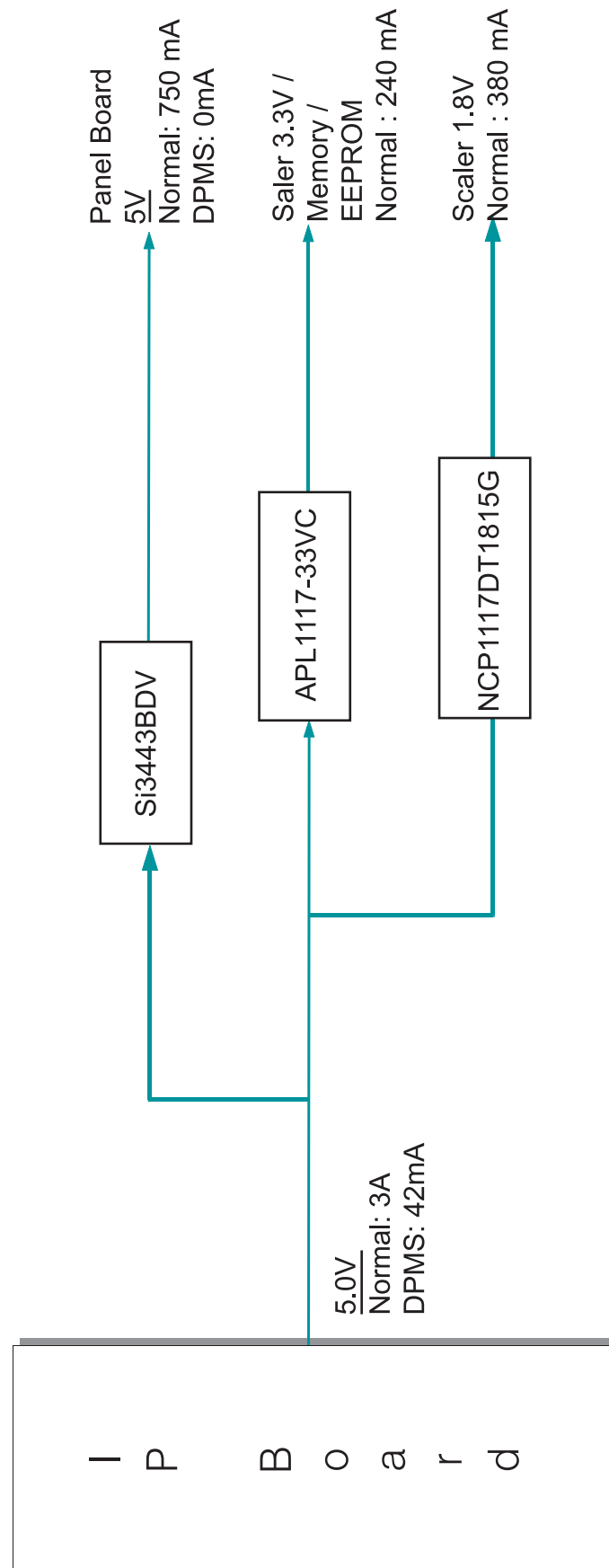


## 5-2 Parts List

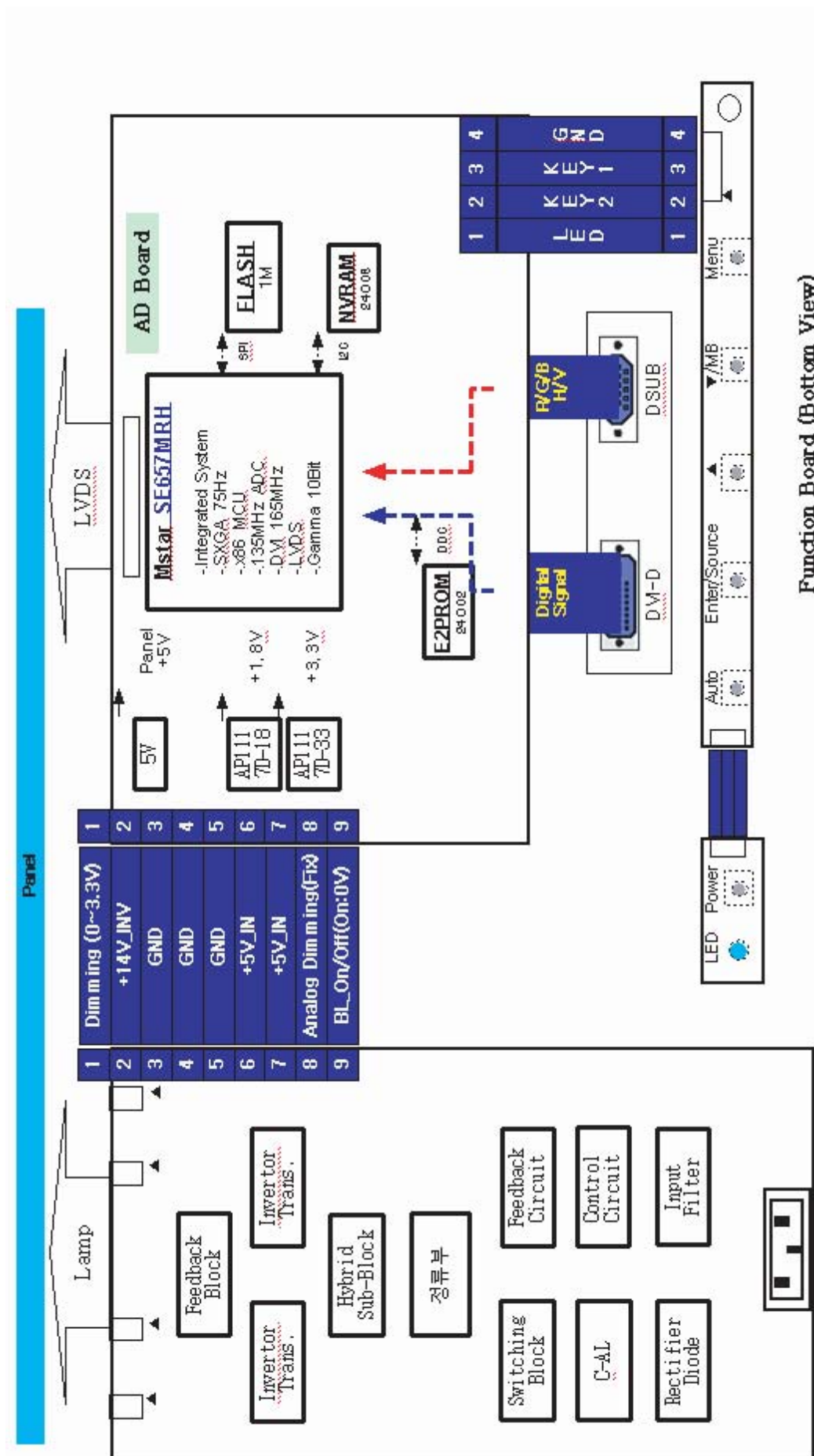
Location	Code.No	Item & Specification	Q'ty	SA/SNA	Remark
T0003	BN96-05098A	ASSY COVER P-FRONT;LS19PEW (932GW),H/GLO	1	S.A	
M0215	BN07-00414A	LCD-PANEL;LTM190M2-L31-9,Pebble,6bit Hi-	1	S.A	
M0174	BN44-00121J	IP BOARD;PWI1904SJ(D),Pebble,3.0 ~5.0mA,	1	S.A	
T0514	BN61-02784A	BRACKET-SUPPORT;PEBBLE,SPTe,0.3	1	S.N.A	
M0014	BN94-01300M	ASSY PCB MAIN-SEDA,FUCHION PCB;PABBLE*	1	S.N.A	
M0006	BN96-05102A	ASSY SHIELD P-COVER;LS19PEW (WIDE),SECC,	1	S.N.A	
M0013	BN96-05100A	ASSY COVER P-REAR;LS19PEW (WIDE),H/GLOSS	1	S.A	
M0013	BN96-04150D	ASSY STAND P-BAR;PEBBLE17,ABS HB,BK26,SF	1	S.A	

## 7 Block Diagram

### 7-1 Power Tree

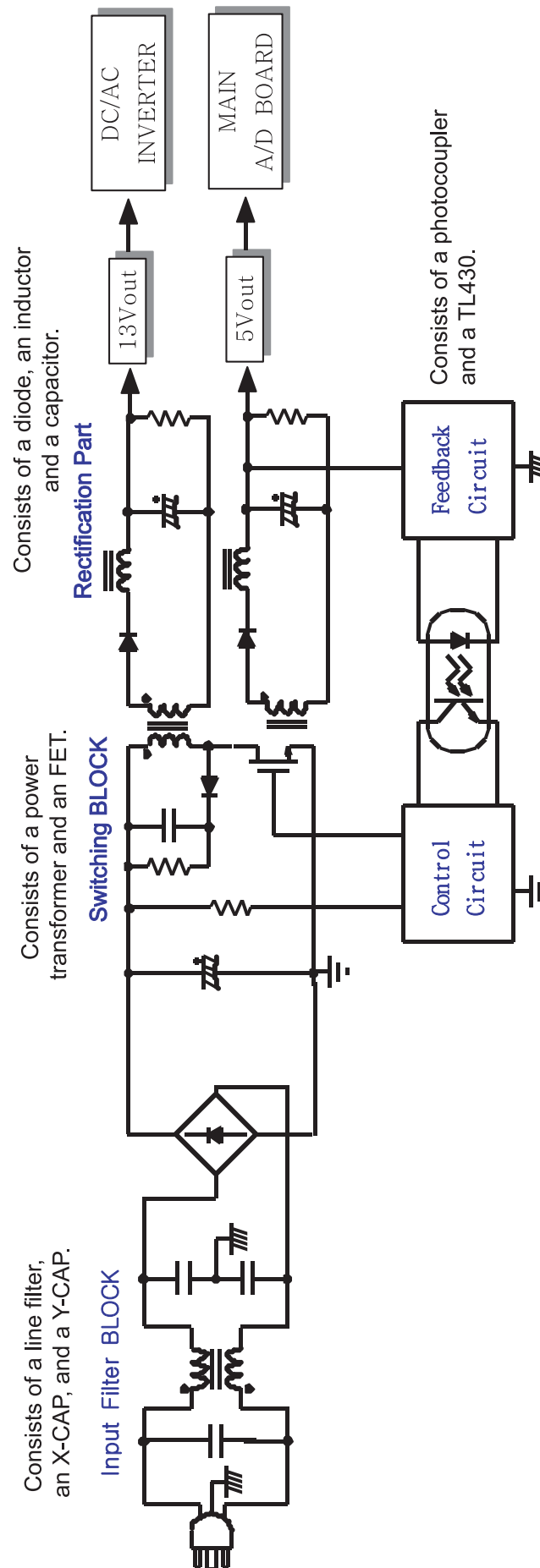


## 7-2 Main Board Part

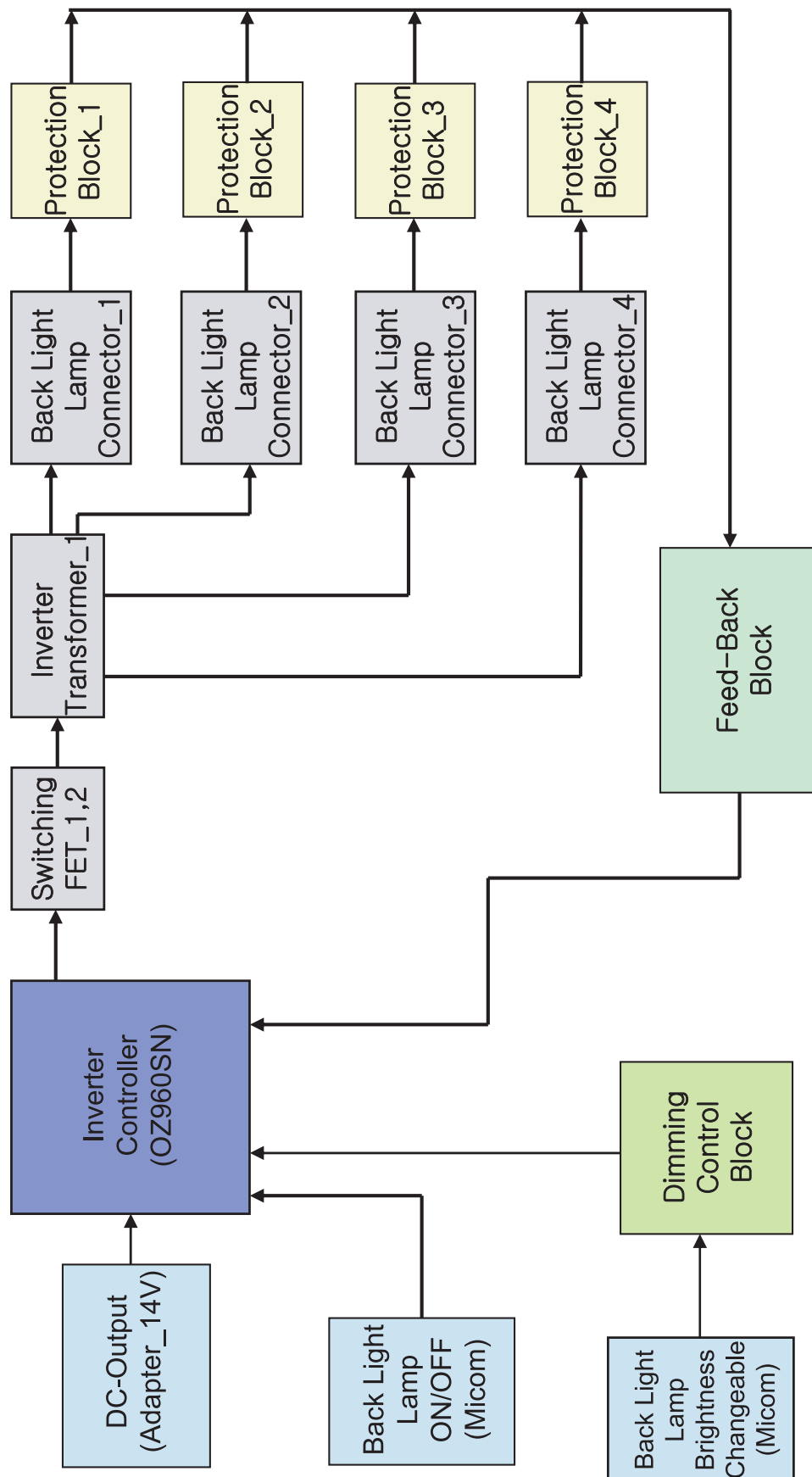




## 7-3 IP Board Part (SMPS Part)

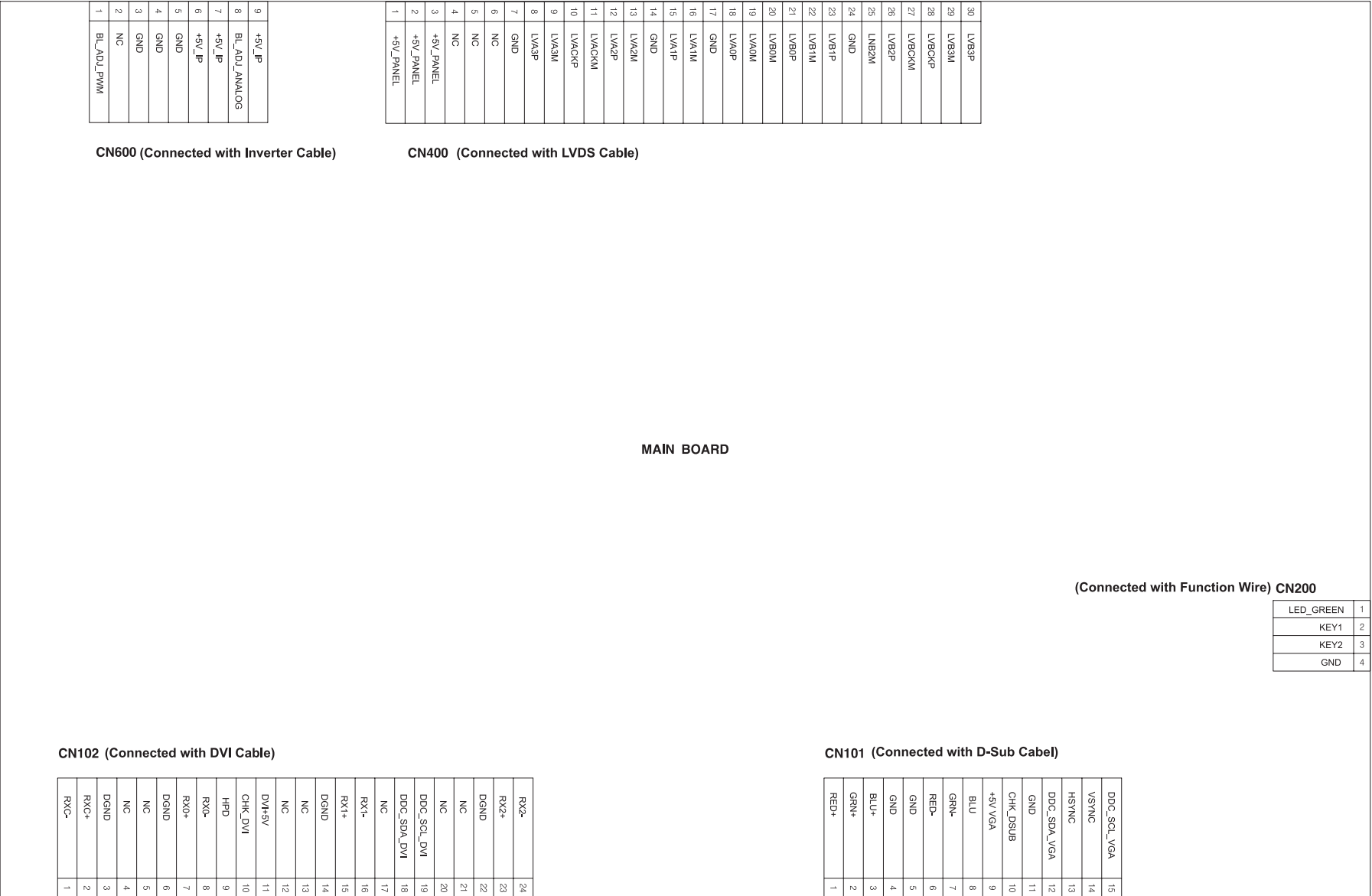


## 7-4 IP Board Part (Inverter Part)



8 Wiring Diagram

8-1 Wiring Diagram 17"

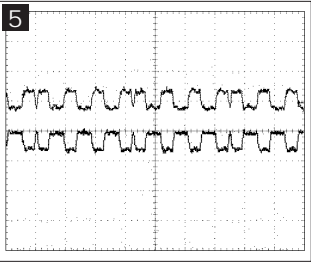
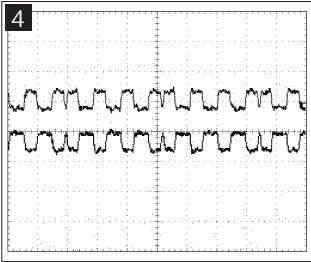
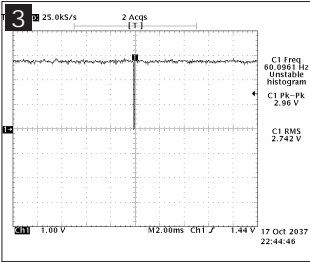
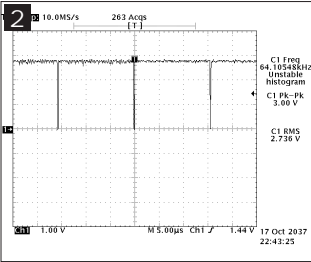
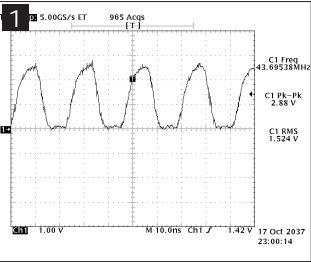


Memo

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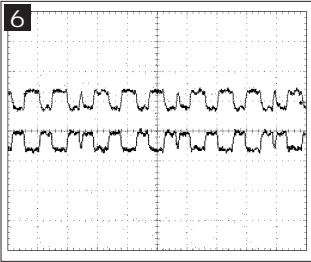
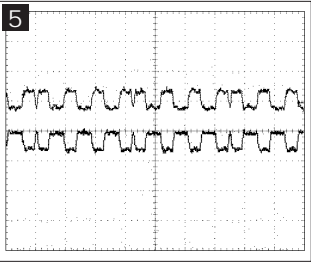
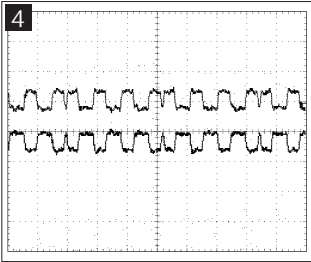
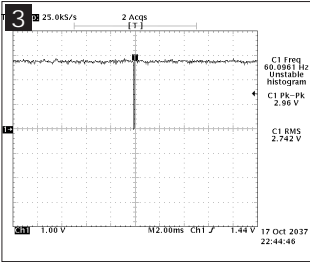
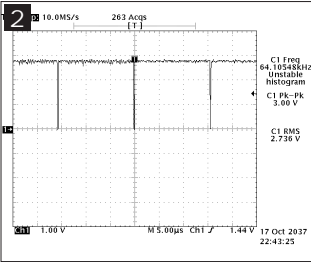
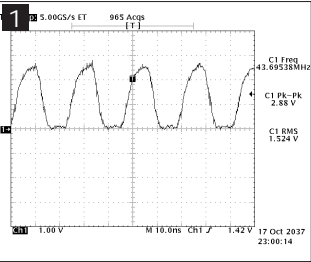
9 Schematic Diagrams



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9 Schematic Diagrams





## 6 Electrical Parts List

### 6-1 Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
		LS19PEJSFV/EDC	932GW,WGB2/S19P2-LPE,19,LCD-MO,NETHERLAN			
0.1	M0001	BN90-01280A	ASSY COVER FRONT;LS19PEJSFV/EDC,WIDE	1	S.N.A	
..2	T0003	BN96-05098A	ASSY COVER P-FRONT;-LS19PEW (932GW),H/G	1	S.A	
...3	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	2	S.A	
...3		BN61-02829A	GUIDE-PANEL;PEBBLE,SECC,0.5,LS19PEB	1	S.N.A	
...3	CCM1	BN63-02183D	COVER-SHEET;Rhcm,PE Vinyl,T0.05,680mm,20	0.5	S.N.A	
...3	M0112	BN63-03405A	COVER-FRONT;LS19PEW,ABS,HB,BK26,H/GLOSSY	1	S.N.A	
...3	T0022	BN64-00534B	KNOB CONTROL;PEBBLE,ABS,HB,BK26	1	S.N.A	
...3	T0023	BN64-00597B	KNOB POWER;PEBBLE,black highglossy	1	S.N.A	
...3	M0130	BN67-00193A	LENS LED;PEBBLE,ABS HB,CLR	1	S.N.A	
...3	M0145	BN96-04363A	ASSY BOARD P-FUNCTION;Pebble,SJ06-01-023	1	S.A	
....4	M0014	BN94-01300M	ASSY PCB MAIN-SEDA,FUCHION PCB;PABBLE*	1	S.N.A	
.....5	M2893	BN39-00774A	LEAD CONNECTOR;Pebble,UL1061#28,UL/CSA,3	1	S.A	
.....5	M2893	BN39-00788A	LEAD CONNECTOR;Pebble,UL1061#28,4PIN,300	1	S.A	
.....5	T0238	BN97-01597B	ASSY AUTO;PEBBLE*	1	S.N.A	
.....6	T0313	3404-000299	SWITCH-TACT;12V,50mA,120gf,6x6x4.3mm,SPS	5	S.A	
.....6	T0174	BN97-01589M	ASSY SMD;PABBLE	1	S.N.A	
.....7	R5	2007-000122	R-CHIP;1.2Kohm,5%,1/10W,TP,1608	1	S.A	
.....7	R7	2007-000122	R-CHIP;1.2Kohm,5%,1/10W,TP,1608	1	S.A	
.....7	R6	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	S.A	
.....7	R8	2007-000123	R-CHIP;1.5Kohm,5%,1/10W,TP,1608	1	S.A	
.....7	R1	2007-001157	R-CHIP;750ohm,5%,1/10W,TP,1608	4	S.A	
.....7	R2	2007-001157	R-CHIP;750ohm,5%,1/10W,TP,1608	1	S.A	
.....7	R3	2007-001157	R-CHIP;750ohm,5%,1/10W,TP,1608	1	S.A	
.....7	R4	2007-001157	R-CHIP;750ohm,5%,1/10W,TP,1608	1	S.A	
.....7	C1	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	3	S.A	
.....7	C2	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A	
.....7	C3	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A	
.....7	PCB	BN41-00793B	PCB SUB-FUNCTION;Pebble,FR-1,1,1.1,1.6,8	1	S.N.A	
....4		BN94-01310C	ASSY PCB MISC-SEDA,POWER,BN96;-PABBLE	1	S.N.A	
.....5	L0405	0601-001896	LED;SMD,BLUE,1.6x0.8x0.4mm,470,1.6x0.8x0	1	S.A	
.....5	L0405	0601-001896	LED;SMD,BLUE,1.6x0.8x0.4mm,470,1.6x0.8x0	1	S.A	
.....5	L0405	0601-001896	LED;SMD,BLUE,1.6x0.8x0.4mm,470,1.6x0.8x0	1	S.A	
.....5	L0405	0601-001896	LED;SMD,BLUE,1.6x0.8x0.4mm,470,1.6x0.8x0	1	S.A	
.....5	T0313	3404-001207	SWITCH-TACT;12V,50mA,160gf,6.2X6.2,SPST	1	S.A	
.....5	SUBPCB	BN41-00791A	PCB SUB-POWER;Pebble,FR-1,1,1.0,1.6,36*1	1	S.N.A	
0.1	M0002	BN90-01281A	ASSY COVER REAR;LS19PEJSFV/EDC,WIDE	1	S.N.A	
..2	M0013	BN96-05100A	ASSY COVER P-REAR;-LS19PEW (WIDE),H/GLO	1	S.A	
...3	M0081	6003-001003	SCREW-TAPTITE;BH,+,-,B,M4,L12,ZPC(BLK),SWR	4	S.N.A	
...3	T0060	BN61-02830A	SPRING ETC;PEBBLE,SK5,1.0,LS19PEB,HRC 45	1	S.N.A	
...3	CCM1	BN63-02183D	COVER-SHEET;Rhcm,PE Vinyl,T0.05,680mm,20	0.5	S.N.A	
...3	M0014	BN63-02880B	COVER-STAND BAR;PEBBLE,ABS HB,T2.6,BK26,	1	S.N.A	

## 6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
...3		BN63-02883B	COVER-HINGE;PEBBLE,ABS HB,T2.6,BK26,HF-0	1	S.N.A	
...3	M0006	BN63-03406A	COVER-REAR;LS19PEW,PCM,0.5,H/GLOSSY	1	S.N.A	
...3	T0102	BN73-00132B	RUBBER-CAP;PEBBLE,ELASTOMER,BK07,HB	1	S.N.A	
0.1		BN91-01517V	ASSY LCD-ATZ;LS19PEJ*	1	S.N.A	
..2	M0215	BN07-00426A	LCD-PANEL;M190PW01 V1,Pebble,6bit Hi-FRC	1	S.A	
0.1	M0112	BN91-01520A	ASSY SHIELD;LS19PEJSFV/EDC,WIDE	1	S.N.A	
..2		BN63-03408A	SHIELD-LAMP;LS19PEW,SPTT,T 0.3,932GW	1	S.N.A	
0.1	M0017	BN91-01715B	ASSY CHASSIS-ATZ,W/W;LS19HPEJ*	1	S.A	
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	1	S.A	
..2	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	3	S.A	
..2	M0081	6003-001439	SCREW-TAPTITE;BH,+,-,S,M4,L8,ZPC(WHT),SW	1	S.N.A	
..2	T0562	6046-001013	STAND OFF;M3,L5,Ni PLT,SUM24L,#4-40	4	S.N.A	
..2	M0174	BN44-00121J	IP BOARD;PWI1904SJ(D),Pebble,3.0 ~5.0mA,	1	S.A	
..2	T0514	BN61-02784A	BRACKET-SUPPORT;PEBBLE,SPTT,0.3	1	S.N.A	
..2	M0014	BN94-01387Z	ASSY PCB MAIN-ATZ,W/W;LS19PEJ*	1	S.N.A	
...3	T0245	0202-001492	SOLDER-WIRE FLUX;HSE-02 LFM48 SR-34 S,-,	0.003	S.N.A	
...3	CN102	3701-001173	CONNECTOR-DVI;24P,3R,FEMALE,ANGLE,AUF	1	S.A	
...3	CN101	3701-001219	CONNECTOR-DSUB;15P,3R,FEMALE,ANGLE,AUF	1	S.A	
...3	HDCP	BN97-00707A	ASSY HDCP;BN46-00018A,BR20/21BS_CS,MSTAR	1	S.N.A	
....4		BN46-00018A	KEY CODE-CERTIFICATE;(HDCP KEY)PPM42M5S,	1	S.N.A	
...3	T0174	BN97-01744B	ASSY SMD;LS19PEJ*	1	S.N.A	
....4	SUB05	0202-001477	SOLDER-CREAM;LST309-M,-,D20~45\$,96.5Sn/	0.165	S.N.A	
....4	D100	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D101	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D102	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D103	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D104	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D105	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D106	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D107	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D108	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D109	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D110	0401-001056	DIODE-SWITCHING;MMBD4148SE,100V,200mA,SO	1	S.A	
....4	D600	0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	S.A	
....4	D603	0402-001614	DIODE-RECTIFIER;S1G,400V,1A,DO-214AC,TP	1	S.A	
....4	D111	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A	
....4	D112	0403-000258	DIODE-ZENER;BZX84C5V6,5.2-6V,225mW,SOT-2	1	S.A	
....4	ZD100	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A	
....4	ZD101	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A	
....4	ZD102	0403-001411	DIODE-ZENER;-5.49-5.73V,200mW,SOD-323,T	1	S.A	
....4	D0254	0404-001020	DIODE-SCHOTTKY;BAT54C,30V,200mA,SOT-23,T	1	S.A	
....4	D0254	0404-001020	DIODE-SCHOTTKY;BAT54C,30V,200mA,SOT-23,T	1	S.A	
....4	ZD200	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A	
....4	ZD201	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A	

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	ZD202	0406-001061	DIODE-TVS;MMQA5V6T3,5.32/5.6/5.88V,24W,S	1	S.A	
....4	Q201	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A	
....4	Q203	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A	
....4	Q204	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A	
....4	Q601	0501-000445	TR-SMALL SIGNAL;KTC3875S-Y,NPN,150mW,SOT	1	S.A	
....4	Q401	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	S.A	
....4	Q402	0501-002080	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SC-59	1	S.A	
....4	Q409	0505-001957	FET-SILICON;NTR2101P,P,-8V,-3.7A,0.052oh	1	S.A	
....4	IC112	1103-000129	IC-EEPROM;24C02,2Kbit,256x8Bit,SOP,8P,5x	1	S.A	
....4	IC112	1103-001023	IC-EEPROM;24C08,8Kbit,1Kx8Bit,SOP,8P,5x4	1	S.A	
....4	IC603	1202-000164	IC-VOLTAGE COMP.;393,SOP,8P,150MIL,DUAL,	1	S.A	
....4	IC204	1203-001824	IC-VOL. DETECTOR;7042,SOT-89,3P,-,PLASTI	1	S.A	
....4	T0087	1203-003695	IC-POSIFIXED REG.;NCP1117ST33T3G,SOT-22	1	S.A	
....4	T0087	1203-003696	IC-POSIFIXED REG.;NCP1117DT18T5G,DPAK,3	1	S.A	
....4	IC109	1205-002939	IC-LCD CONTROLLER;SE657MRH-LF,PQFP,128P,	1	S.A	
....4	R608	2007-000052	R-CHIP;10Kohm,1%,1/10W,TP,1608	1	S.A	
....4	R274	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A	
....4	R275	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A	
....4	R276	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A	
....4	R277	2007-000070	R-CHIP;0ohm,5%,1/10W,TP,1608	1	S.A	
....4	R100	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R101	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R102	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R103	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R104	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R105	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R106	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R107	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R204	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R205	2007-000071	R-CHIP;22ohm,5%,1/10W,TP,1608	1	S.A	
....4	R111	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R113	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R114	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R117	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R118	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R120	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R132	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R202	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R203	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R206	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R207	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R212	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R213	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R216	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R228	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R245	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R250	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	

## 6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	R251	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R252	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R255	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1	S.A	
....4	R108	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R123	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R270	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R208	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R209	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R218	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R229	2007-000083	R-CHIP;3Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R219	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R220	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R223	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R230	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R234	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R600	2007-000088	R-CHIP;7.5Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R109	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R125	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R126	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R130	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R131	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R200	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R201	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R210	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R211	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R214	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R215	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R217	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R239	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R253	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R254	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R271	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R400	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R401	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R403	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R404	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R405	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R601	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R602	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R612	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R610	2007-000091	R-CHIP;12Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R402	2007-000102	R-CHIP;100Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R232	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	1	S.A	
....4	R605	2007-000134	R-CHIP;33Kohm,5%,1/10W,TP,1608	1	S.A	
....4	R116	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	S.A	
....4	R235	2007-000821	R-CHIP;390ohm,1%,1/10W,TP,1608	1	S.A	
....4	R110	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608	1	S.A	

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	R273	2007-001002	R-CHIP;510ohm,5%,1/10W,TP,1608	1	S.A	
....4	R121	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A	
....4	R122	2007-001044	R-CHIP;56ohm,5%,1/10W,TP,1608	1	S.A	
....4	R112	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A	
....4	R115	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A	
....4	R119	2007-001164	R-CHIP;75ohm,1%,1/10W,TP,1608	1	S.A	
....4	C215	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A	
....4	C609	2203-000189	C-CER,CHIP;100nF,+80-20%,25V,Y5V,1608	1	S.A	
....4	C201	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A	
....4	C202	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A	
....4	C642	2203-000236	C-CER,CHIP;0.1nF,5%,50V,C0G,1608	1	S.A	
....4	C109	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A	
....4	C216	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A	
....4	C217	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A	
....4	C218	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,1608	1	S.A	
....4	C116	2203-000384	C-CER,CHIP;0.015nF,5%,50V,C0G,1608	1	S.A	
....4	C115	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A	
....4	C210	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A	
....4	C211	2203-000626	C-CER,CHIP;0.022nF,5%,50V,C0G,1608	1	S.A	
....4	C100	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C101	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C103	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C106	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C107	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C108	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C110	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C111	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C112	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C117	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C118	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C119	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C120	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C121	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C122	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C123	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C124	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C125	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C200	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C203	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C204	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C205	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C206	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C209	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C212	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C213	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C214	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C436	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	

## 6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	C600	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C601	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C603	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C604	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C605	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C612	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C613	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C614	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C615	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C617	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C618	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C619	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C620	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C621	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C622	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C623	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C626	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C627	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C628	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C630	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C631	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C635	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C636	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C637	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C640	2203-005005	C-CER,CHIP;100nF,10%,16V,X7R,1608	1	S.A	
....4	C208	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C220	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C309	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C311	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C606	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C610	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C641	2203-005065	C-CER,CHIP;1000nF,+80-20%,10V,Y5V,1608	1	S.A	
....4	C207	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C602	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C611	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C616	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C624	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C625	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C632	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C633	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C634	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C638	2203-005437	C-CER,CHIP;10000nF,+80-20%,10V,Y5V,3216	1	S.A	
....4	C608	2203-006336	C-CER,CHIP;10000nF,10%,25V,X5R,3216	1	S.A	
....4	X1	2801-003667	CRYSTAL-SMD;14.31818MHz,30ppm,28-AAN,16p	1	S.A	
....4	T0568	3301-001145	BEAD-SMD;60ohm,4516,TP,70ohm/45MHz,82ohm	1	S.N.A	
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	1	S.N.A	
....4	T0568	3301-001407	BEAD-SMD;30ohm,1608,300mA,TP,,,0.4ohm	1	S.N.A	

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	T0568	3301-001569	BEAD-SMD;600ohm,2012,1000mA,TP,520ohm/90	1	S.N.A	
....4	CN400	3708-001150	CONNECTOR-FPC/FFC/PIC;30P,1mm,SMD-A,SN,Y	1	S.A	
....4	CN330	3711-005503	HEADER-BOARD TO CABLE;BOX,9P,1R,2mm,SMD-	1	S.A	
....4	CN330	3711-005509	HEADER-BOARD TO CABLE;BOX,4P,1R,1.25mm,S	1	S.A	
....4	T0077	BN41-00831A	PCB MAIN;LS19PEB,Silver through,2,MP1.0,	1	S.N.A	
....4	MICOM	BN97-01750A	ASSY MICOM-ATZ,W/W;M-PE19J0CLA-1000,(B26	1	S.N.A	
....5	IC115	1107-001614	IC-FLASH MEMORY;MX25L1005,1Mbit,1Mx1Bit,	1	S.N.A	
....4	C435	2402-001128	C-AL,SMD;100WIF,20%,16V,-,TP,6.3X5.7mm	1	S.A	
....4	C629	2402-001128	C-AL,SMD;100WIF,20%,16V,-,TP,6.3X5.7mm	1	S.A	
....4	C639	2402-001128	C-AL,SMD;100WIF,20%,16V,-,TP,6.3X5.7mm	1	S.A	
..2	M0251	BN96-02854J	ASSY CABLE P;-;UL21341,FFC CABLE,120MM,1	1	S.A	
..2	M0006	BN96-05102A	ASSY SHIELD P-COVER;LS19PEW (WIDE),SECC,	1	S.N.A	
....3		BN61-02429D	STUD-PEM;PNB,M2.8,D7,L20,ZPC(SIL),SUM24L	1	S.N.A	
....3	M0107	BN63-03407A	SHIELD-COVER;LS19PEW,SECC,T 0.8	1	S.N.A	
....3	M0114	BP61-01088A	HOLDER-WIRE;SVP-42L6,NYLON	1	S.N.A	
....3	M0131	AA63-01241A	GASKET;FIRENZE,Conductive Fabric,2mm,12m	3	S.N.A	
..2	M0524	BP39-00028A	CONNECT WIRE;B117,19BS,UL1007#26,9P,80mm	1	S.A	
0.1	M0113	BN92-02447Y	ASSY P/MATERIAL;LS19PEJSFV/EDC	1	S.N.A	
..2	T0376	6902-000061	BAG AIR;LDPE,T0.2,L1000,W500,TRP,,,	0.005	S.N.A	
..2	T0524	6902-000241	BAG PE;NITRON/HDPE,T0.5/T0.012,W600,L600	1	S.N.A	
..2	T0376	6902-000379	BAG AIR;LDPE,T0.2,W1000,L1800,TRP,-,--	0.001	S.N.A	
..2	T0003	6902-000604	BAG WRAPPING;LDPE,T0.02,W500,L10000,TRP,	0.88	S.N.A	
..2	M0081	6902-000609	BAG ROLL;LDPE,T0.05,W2400,L1000,TRP,-,-	0.018	S.N.A	
0.1	M0045	BN92-02574X	ASSY ACCESSORY;LS19PEJSFV/EDC	1	S.N.A	
..2	M0114	BN39-00244B	CBF SIGNAL;MO15PS,15P/15P,20276-N,1830mm	1	S.A	
..2	M0125	BN39-00246F	CBF SIGNAL-DVI(D);1703FP,24P/24P,20276-D	1	S.A	
..2		BN68-01115C	MANUAL FLYER-QSG;COMM,SyncMaster,korean,	1	S.N.A	
..2	M0013	BN96-04150D	ASSY STAND P-BAR;-;PEBBLE17,-,ABS HB,BK2	1	S.A	
....3	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	2	S.A	
....3	T0524	6902-000023	BAG PE;LDPE,T0.08,L120,W150,TRP,,,PE MAR	1	S.N.A	
....3		BN61-02783D	STAND-BAR;PEBBLE,ABS HB,SL-414WH,BK26,SF	1	S.N.A	
....3		BN61-02786A	BRACKET-PLATE;PEBBLE,SECC,1.0	1	S.N.A	
..2	M0027	BN96-04154B	ASSY STAND P-BASE;-;PEBBLE19,-,ABS HB,BK	1	S.A	
....3	M0081	6003-000282	SCREW-TAPTITE;BH,+,-,B,M3,L8,ZPC(BLK),SW	4	S.A	
....3	T0524	6902-000389	BAG PE;HDPE/NITRON/HDPE,T0.015/T0.5/T0.0	1	S.N.A	
....3	CIS4	BN61-01717A	HOLDER-STAND;BIZET,NI PLT,CH,+M4,L11(5)	1	S.A	
....3		BN61-02785A	BRACKET-STAND BODY;PEBBLE,SECC,0.8	1	S.N.A	

## 6 Electrical Parts List

Level	Loc. No.	Code No.	Description & Specification	Q'ty	SA/SNA	Remark
...3	CCM1	BN63-02183C	COVER-SHEET;RhcM,PE Vinyl,T0.05,200mm,20	0.3	S.N.A	
...3	T0004	BN63-02882B	COVER-STAND BASE;PEBBLE,ABS,2.6,HB,BK26	1	S.N.A	
...3	T0132	BN73-00077A	RUBBER FOOT;MATISSE,BUMPON,"#13.5,T2.0,6	4	S.N.A	
...3		BN68-01115A	MANUAL FLYER-QSG;COMM,SyncMaster,korean,	1	S.N.A	
..2	M0045	BN96-05358C	ASSY ACCESSORY;LS19PEJSFV/EDC,-,-,-,-,-	1	S.A	
...3	T0268	3903-000042	CBF-POWER CORD;DT,EU,FP3/YES,IEC320 C13/	1	S.A	
...3	T0524	6902-000110	BAG PE;LDPE,T0.05,W250,L400,TRP,28,2	1	S.N.A	
...3	ACCESSORY	BH68-70448A	CARD-01;TFT LCD,SRC,RUSSIA,S/W,120,W210*	1	S.N.A	
...3	ACCESSORY	BN63-02368A	CLOTH;LS07BTT,SUEDE,0.6,160,120	1	S.N.A	
...3	ACCESSORY	BN68-00907A	MANUAL FLYER-01,CARD;COMM,SAMSUNG,18 LAN	1	S.N.A	
...3	M0215	BN96-04304N	ASSY MANUAL P-IB+QSG;932GW,-,-,W/W,Multe	1	S.N.A	
....4	QSG	BH68-00376L	MANUAL FLYER-06,QSG;LCDQUICK SETUP GUIDE	1	S.N.A	
....4	IB	BN59-00585N	S/W DRIVER-00,IB;932GW,W/W,SyncMaster,RT	1	S.N.A	
...3	ACCESSORY	BH68-00633B	MANUAL FLYER-00,WARRANTY CARD;comm,Samsu	1	S.N.A	
0.1	M0019	BN92-02590M	ASSY LABEL;LS19PEJSFV/EDC	1	S.N.A	
0.1	M0003	BN92-02593A	ASSY BOX;LS19PEJSFV/EDC	1	S.N.A	
..2	BOX	BN69-01851A	BOX-03,MONITOR;LS19PEW,CB,SY-01,A1,W07,D	1.02	S.N.A	
..2	T0081	BN96-02895A	ASSY MISC P-HANDLE PACKING;ALL MODEL,BN6	1	S.N.A	
...3	M0103	BN66-00007A	LEVER-TOP;ALL MODEL,LDPE,WHITE	1	S.N.A	
...3	M0102	BN66-00008A	LEVER-BOTTOM;ALL MODEL,LDPE,WHITE	1	S.N.A	

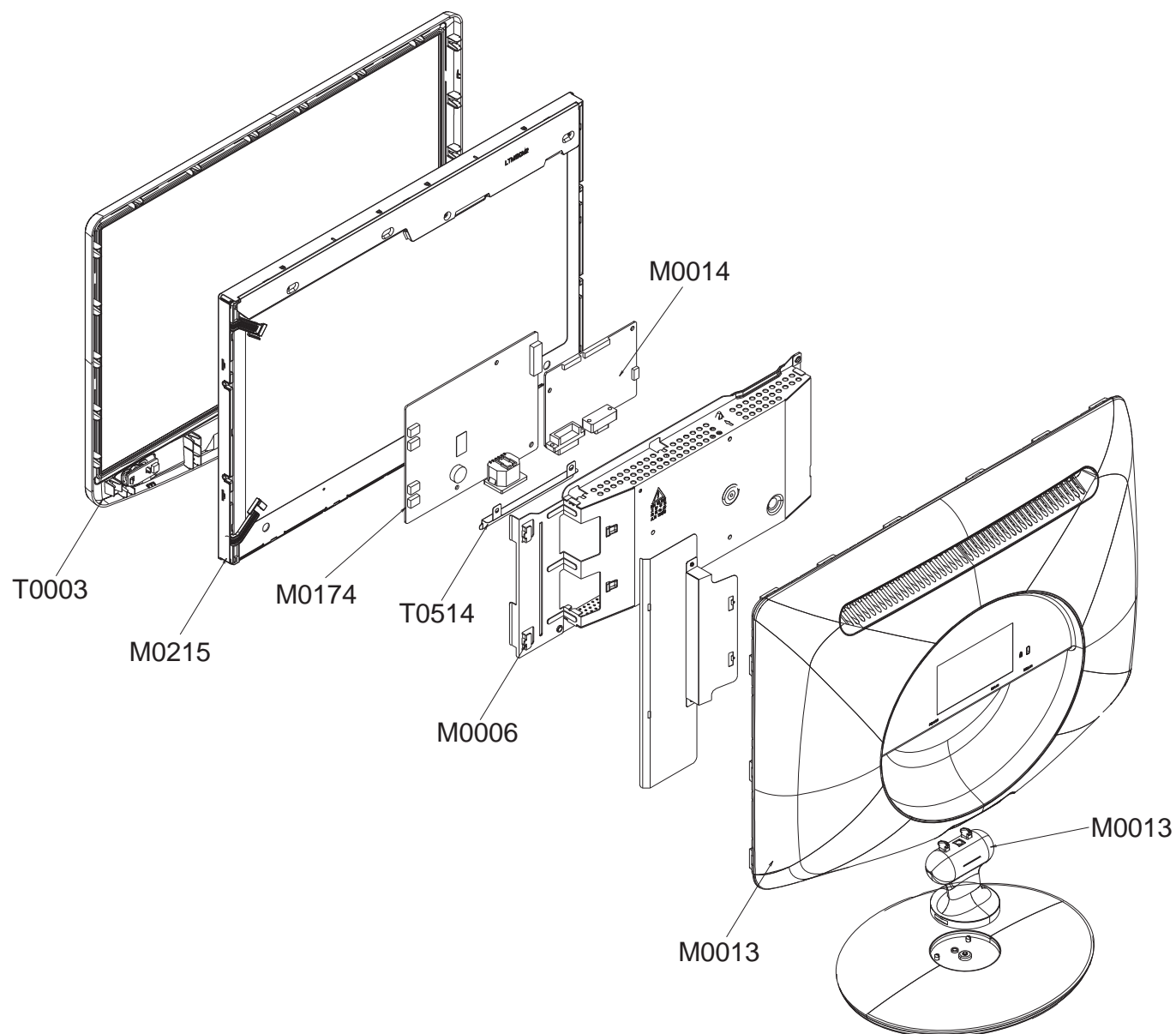


## 5 Exploded View and Parts List

-You can search for updated part codes through ITSELF web site.

URL : <http://itself.sec.samsung.co.kr>

### 5-1 Exploded View



## 5-2 Parts List

Location	Code.No	Item & Specification	Q'ty	SA/SNA	Remark
T0003	BN96-05098A	ASSY COVER P-FRONT;- ,LS19PEW (932GW),H/G	1	S.A	
M0215	BN07-00426A	LCD-PANEL;M190PW01 V1,Pebble,6bit Hi-FRC	1	S.A	
M0174	BN44-00121J	IP BOARD;PWI1904SJ(D),Pebble,3.0 ~5.0mA,	1	S.A	
T0514	BN61-02784A	BRACKET-SUPPORT;PEBBLE,SPTE,0.3	1	S.N.A	
M0014	BN94-01300M	ASSY PCB MAIN-SEDA,FUCHION PCB;PABBLE*	1	S.N.A	
M0006	BN96-05102A	ASSY SHIELD P-COVER;LS19PEW (WIDE),SECC,	1	S.N.A	
M0013	BN96-05100A	ASSY COVER P-REAR;- ,LS19PEW (WIDE),H/GLO	1	S.A	
M0013	BN96-04150D	ASSY STAND P-BAR;- ,PEBBLE17,- ,ABS HB,BK2	1	S.A	